सिविल सेवा (प्रारंभिक) टेस्ट सीरीज़-2024

जब तक आपको यह परीक्षण पुस्तिका खोलने को न कहा जाए तब तक न खोलें

परीक्षण पुस्तिका अनुक्रम

Test Code: P1/P2-2406

परीक्षण पुस्तिका

सामान्य अध्ययन

टेस्ट – 06

B

समय : दो घण्टे **पूर्णांक : 200**

अनुदेश

1. **परीक्षा प्रारम्भ होने के तुरन्त बाद, आप इस परीक्षण पुस्तिका की पड़ताल अवश्य कर लें कि इसमें कोई बिना छपा, फटा या छूटा हुआ पृष्ठ अथवा प्रश्न आदि न हो। यदि ऐसा हो तो इसे सही परीक्षण पुस्तिका से बदल लीजिए।**
2. **उत्तर-पत्रक में सही स्थान पर परीक्षण पुस्तिका अनुक्रम A, B, C या D यथास्थिति स्पष्ट रूप से कूटबद्ध कीजिये।**
3. इस पंक्ति के साथ में दिये गए कोष्ठक में आपको अपना अनुक्रमांक लिखना है। परीक्षण पुस्तिका पर **और कुछ न** लिखें।
4. इस परीक्षण पुस्तिका में **100** प्रश्नांश (प्रश्न) दिये गए हैं। प्रत्येक प्रश्नांश हिन्दी और अंग्रेज़ी में छपा है। प्रत्येक प्रश्नांश में चार प्रत्युत्तर (उत्तर) दिये गए हैं। इनमें से एक प्रत्युत्तर को चुन लें जिसे आप उत्तर-पत्रक पर अंकित करना चाहते हैं। यदि आपको ऐसा लगे कि एक से अधिक प्रत्युत्तर सही हैं तो उस प्रत्युत्तर को अंकित करें जो आपको सर्वोत्तम लगे। प्रत्येक प्रश्नांश के लिये केवल एक ही प्रत्युत्तर चुनना है।
5. आपको अपने सभी प्रत्युत्तर अलग से दिये गए उत्तर-पत्रक पर ही अंकित करने हैं। उत्तर-पत्रक में दिये गए निर्देश देख लें।
6. सभी प्रश्नों के अंक समान हैं।
7. इससे पहले कि आप परीक्षण पुस्तिका के विभिन्न प्रश्नांशों के प्रत्युत्तर उत्तर पत्रक पर अंकित करना शुरू करें, आपको प्रवेश प्रमाण-पत्र के साथ प्रेषित अनुदेशों के अनुसार कुछ विवरण उत्तर-पत्रक में देने हैं।
8. आप अपने सभी प्रत्युत्तरों को उत्तर-पत्रक में भरने के बाद तथा परीक्षा के समापन पर केवल उत्तर-पत्रक अधीक्षक को सौंप दें। आपको अपने साथ परीक्षण पुस्तिका ले जाने की अनुमति है।
9. कच्चे काम के लिये कुछ पत्रक परीक्षण पुस्तिका के अंत में संलग्न हैं।
10. **गलत उत्तरों के लिये दंड:**

वस्तुनिष्ठ प्रश्न-पत्रों में उम्मीदवार द्वारा दिये गए गलत उत्तरों के लिये दंड दिया जाएगा।

(i) प्रत्येक प्रश्न के लिये चार वैकल्पिक उत्तर हैं। उम्मीदवार द्वारा प्रत्येक प्रश्न के लिये दिये गए एक गलत उत्तर के लिये प्रश्न हेतु नियत किये गए अंकों का **एक-तिहाई** दंड के रूप में काटा जाएगा।

(ii) यदि कोई उम्मीदवार एक से अधिक उत्तर देता है, तो इसे **गलत उत्तर** माना जाएगा, चाहे दिये गए उत्तरों में से एक उत्तर सही हो, उस प्रश्न के लिये उपर्युक्तानुसार ही दंड दिया जाएगा।

(iii) यदि उम्मीदवार द्वारा कोई प्रश्न हल नहीं किया जाता है, अर्थात् उम्मीदवार द्वारा उत्तर नहीं दिया जाता है, तो उस प्रश्न के लिये **कोई दण्ड नहीं** दिया जाएगा।

जब तक आपको यह परीक्षण पुस्तिका खोलने को न कहा जाए तब तक न खोलें

***ध्यान दें :* अनुदेशों का अंग्रेज़ी रूपान्तर इस पुस्तिका के अंतिम पृष्ठ पर छपा है।**

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1. निम्न पर विचार कीजिये:

1. राष्ट्रीय उद्यान
2. जंतु उद्यान
3. पवित्र उपवन
4. सामुदायिक अभयारण्य
5. वनस्पतिय उद्यान

उपर्युक्त में से कितने जैव संरक्षण के स्वस्थाने (इन सीटू) तरीके हैं?

(a) केवल दो *(b)* केवल तीन
(c) केवल चार *(d)* सभी पाँच

2. जैव उत्पादकता के संदर्भ में निम्नलिखित पर विचार कीजिये:

1. किसी पारिस्थितिकी तंत्र की सकल प्राथमिक उत्पादकता प्रकाश संश्लेषण के दौरान जैविक पदार्थों के उत्पादन की दर है।
2. द्वितीयक उत्पादकता को उपभोक्ताओं द्वारा नए जैविक पदार्थ के निर्माण की दर के रूप में परिभाषित किया गया है।

उपर्युक्त कथनों में से कौन-सा/से सही है/हैं?

(a) केवल 1 *(b)* केवल 2
(c) 1 और 2 दोनों *(d)* न तो 1 और न ही 2

3. निम्नलिखित में से कौन-सा "फ्रैंकनरॉक्स" का सर्वोत्तम वर्णन करता है?

(a) तटीय क्षेत्रों में प्राकृतिक रूप से पाई जाने वाली चट्टानें।
(b) चट्टानें जो पिघले हुए प्लास्टिक से संदूषित और परिवर्तित हो गई हैं।
(c) ज्वालामुखीय चट्टानें विभिन्न खनिजों के संलयन से निर्मित हैं।
(d) तटीय चट्टानों में निहित प्रागैतिहासिक समुद्री जीवों के जीवाश्म।

4. पारिस्थितिक पिरामिडों के संदर्भ में, निम्नलिखित पर विचार कीजिये:

1. जैव मात्रा के एक सीधे पिरामिड में, निचले पोषी स्तर पर ऊर्जा हमेशा उच्च स्तर की तुलना में अधिक होती है।
2. समुद्र में जैव मात्रा का पिरामिड सामान्यत: सीधा होता है।
3. ऊर्जा का पिरामिड कभी भी उल्टा नहीं हो सकता।

उपर्युक्त में से कितने कथन सही हैं?

(a) केवल एक *(b)* केवल दो
(c) सभी तीन *(d)* कोई भी नहीं

5. समष्टि पारस्परिक क्रियाएँ के संदर्भ में, निम्नलिखित युग्मों पर विचार कीजिये:

पारस्परिक क्रियाओं के प्रकार		*पारस्परिक क्रियाओं की प्रकृति*
1. सहोपकारिता	:	दोनों जातियों को लाभ होता है
2. स्पर्द्धा	:	एक जाति को लाभ होता है, दूसरी अप्रभावित रहती है
3. सहभोजिता	:	एक जाति को लाभ होता है और दूसरी को हानि होती है

उपर्युक्त में से कितने युग्म सही सुमेलित हैं?

(a) केवल एक *(b)* केवल दो
(c) सभी तीन *(d)* कोई भी नहीं

6. आनुवंशिकत: रूपांतरित (GM) पौधों के संदर्भ में, निम्नलिखित पर विचार कीजिये:

1. अजैव प्रतिबलों के प्रति फसलें अधिक सहिष्णु बन जाती हैं
2. रासायनिक पीड़कनाशकों पर निर्भरता कम करता है
3. फसल कटाई के बाद के नुकसान को कम करने में सहायता करता है
4. पौधों द्वारा खनिज उपयोग की क्षमता को बढ़ाता है
5. खाद्य पदार्थों के पोषण स्तर को बढ़ाता है

उपर्युक्त में से GM पौधों के कितने लाभ हैं?

(a) केवल दो *(b)* केवल तीन
(c) केवल चार *(d)* सभी पाँच

7. जेनेटिक इंजीनियरिंग मूल्यांकन समिति (GEAC) के संदर्भ में, निम्नलिखित पर विचार कीजिये:

1. यह पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय (MoEF&CC) के तहत कार्य करता है।
2. MoEF&CC के केंद्रीय मंत्री समिति के अध्यक्ष हैं।
3. समिति आनुवंशिकत: निर्मित (GE) जीवों की निर्मुक्ति से संबंधित प्रस्तावों के मूल्यांकन के लिये ज़िम्मेदार है।

उपर्युक्त में से कितने कथन सही हैं?

(a) केवल एक *(b)* केवल दो
(c) सभी तीन *(d)* कोई भी नहीं

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1. Consider the following:

1. National Parks
2. Zoological Parks
3. Sacred Groves
4. Community Reserves
5. Botanical Garden

How many of the above are in-situ methods of biological conservation?

(a) Only two *(b)* Only three
(c) Only four *(d)* All five

2. With reference to biological productivity, consider the following:

1. Gross primary productivity of an ecosystem is the rate of production of organic matter during photosynthesis.
2. Secondary productivity is defined as the rate of formation of new organic matter by consumers.

Which of the statements given above is/are correct?

(a) 1 only *(b)* 2 only
(c) Both 1 and 2 *(d)* Neither 1 nor 2

3. Which of the following best describes 'Frankenrocks'?

(a) Naturally occurring rock formations found in coastal areas.
(b) Rocks that have been contaminated and altered by melted plastic.
(c) Volcanic rocks formed through the fusion of different minerals.
(d) Fossils of prehistoric marine creatures embedded in coastal rocks.

4. With reference to Ecological pyramids, consider the following:

1. In an upright pyramid of biomass, energy at a lower trophic level is always more than at a higher level.
2. The pyramid of biomass in sea is generally upright.
3. The pyramid of energy can never be inverted.

How many of the above statements are correct?

(a) Only one *(b)* Only two
(c) All three *(d)* None

5. With reference to population interactions, consider the following pairs:

Type of Interaction		*Nature of Interaction*
1. Mutualism	:	both species benefit
2. Competition	:	one species benefits other is unaffected
3. Commensalism	:	one specie is benefited and the other is harmed

How many of the above pairs are correctly matched?

(a) Only one *(b)* Only two
(c) All three *(d)* None

6. With reference to Genetically Modified (GM) plants, consider the following:

1. Crops become more tolerant to abiotic stresses
2. Reduces reliance on chemical pesticides
3. Helps to reduce post-harvest losses
4. Increases efficiency of mineral usage by plants
5. Enhances nutritional value of food

How many of the above are benefits of GM plants?

(a) Only two *(b)* Only three
(c) Only four *(d)* All five

7. With reference to Genetic Engineering Appraisal Committee (GEAC), consider the following:

1. It functions under the Ministry of Environment, Forest and Climate Change (MoEF&CC).
2. The union minister of MoEF&CC is the chairperson of the committee.
3. The committee is responsible for appraisal of proposals relating to release of genetically engineered (GE) organisms.

How many of the above statements are correct?

(a) Only one *(b)* Only two
(c) All three *(d)* None

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8. निम्नलिखित में से कौन-सा बायोपाइरेसी की अवधारणा का सर्वोत्तम वर्णन करता है?

(a) व्यावसायीकरण और समाज के समग्र लाभों के लिये जैव संसाधनों से प्राप्त उपयोगी उत्पादों की व्यवस्थित खोज।

(b) क्षतिपूर्ति भुगतान या अनुमति के बिना जैविक संसाधनों का अवैध दोहन।

(c) आयुध निर्माण के लिये जैविक संसाधनों का गैर-ज़िम्मेदाराना साझाकरण।

(d) निजी संस्थाओं द्वारा जैविक संसाधनों के उपयोग को विनियमित करने में सरकार की भूमिका।

9. जैव सुधार के संदर्भ में निम्नलिखित कथनों पर विचार कीजिये:

1. यह एक भौतिक प्रणाली है जिसका उपयोग संदूषित स्थलों को साफ करने के लिये किया जाता है।
2. इसमें मुख्य रूप से पर्यावरण में संदूषकों के निम्नीकरण के लिये रसायनों का उपयोग शामिल है।
3. यह मृदा, जल या वायु से विभिन्न प्रदूषकों को नष्ट करने या हटाने के लिये सूक्ष्मजीवों का उपयोग करता है।
4. यह केवल जैविक प्रदूषकों के उपचार में प्रभावी है और अकार्बनिक संदूषकों के लिये यह उपयोगी नहीं है।

उपर्युक्त में से कितने कथन सही हैं?

(a) केवल एक *(b)* केवल दो

(c) केवल तीन *(d)* सभी चार

10. ताप-विघटन (Pyrolysis) में शामिल प्राथमिक प्रक्रिया क्या है?

(a) कार्बनिक पदार्थों का दहन।

(b) ठोस अपशिष्ट का विद्युत में रूपांतरण।

(c) ऑक्सीजन की अनुपस्थिति में उच्च तापमान पर कार्बनिक पदार्थों का रासायनिक अपघटन।

(d) ऑक्सीजन की उपस्थिति में कम तापमान पर कार्बनिक पदार्थों का रासायनिक अपघटन।

11. हाई सी पर संयुक्त राष्ट्र संधि के संदर्भ में निम्नलिखित कथनों पर विचार कीजिये:

1. हाई सी, महासागर के वे क्षेत्र हैं जो किसी देश की जलीय सीमा के ठीक बाद स्थित हैं और किसी देश के अधिकार क्षेत्र में नहीं हैं।
2. यह संधि विधिक रूप से बाध्यकारी एक अंतर्राष्ट्रीय समझौता है जिसे समुद्री कानून पर संयुक्त राष्ट्र सम्मेलन (UNCLOS) की रूपरेखा के अंतर्गत विकसित किया जा रहा है।

उपर्युक्त कथनों में से कौन-सा/से सही है/हैं?

(a) केवल 1

(b) केवल 2

(c) 1 और 2 दोनों

(d) न तो 1 और न ही 2

12. वन वेब इंडिया-2 मिशन के संदर्भ में निम्नलिखित कथनों पर विचार कीजिये:

1. लॉन्च व्हीकल मार्क-3 (LVM-3) इस ब्रॉडबैंड समूह का वाहक वाहन है।
2. यह निम्न पृथ्वी कक्षा (LEO) ध्रुवीय कक्षा में संचालित होता है।
3. यह निम्न-लेटेंसी समाधान प्रदान करता है।

उपर्युक्त में से कितने कथन सही हैं?

(a) केवल एक *(b)* केवल दो

(c) सभी तीन *(d)* कोई भी नहीं

13. निम्नलिखित कथनों पर विचार कीजिये:

कथन-I:

महिलाओं की समानता के बारे में जागरूकता बढ़ाने के लिये प्रतिवर्ष 8 मार्च को अंतर्राष्ट्रीय महिला दिवस मनाया जाता है।

कथन-II:

महिला दिवस पहली बार वर्ष 1911 में क्लारा ज़ेटकिन द्वारा 8 मार्च को मनाया गया था।

उपर्युक्त कथनों के बारे में, निम्नलिखित में से कौन-सा एक सही है?

(a) कथन-I और कथन-II दोनों सही हैं तथा कथन-II, कथन-I की सही व्याख्या है।

(b) कथन-I और कथन-II दोनों सही हैं तथा कथन-II, कथन-I की सही व्याख्या नहीं है।

(c) कथन-I सही है किंतु कथन-II गलत है।

(d) कथन-I गलत है किंतु कथन-II सही है।

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8. Which of the following best describes the concept of Biopiracy?

(a) Systematic search for useful products derived from bioresources for commercialization and overall benefits of the society.

(b) The illegal exploitation of biological resources without compensatory payment or authorisation.

(c) The irresponsible sharing of biological resources for making weapons.

(d) The government's role in regulating the use of biological resources by private entities.

9. With reference to bioremediation, consider the following statements:

1. It is a physical method used to clean up contaminated sites.
2. It primarily involves the use of chemicals to degrade pollutants in the environment.
3. It utilizes microorganisms to break down or remove contaminants from soil, water, or air.
4. It is only effective in treating organic pollutants and has no application for inorganic contaminants.

How many of the above statements are correct?

(a) Only one *(b)* Only two

(c) Only three *(d)* All four

10. What is the primary process involved in pyrolysis?

(a) Combustion of organic materials.

(b) Conversion of solid waste into electricity.

(c) Chemical decomposition of organic materials at high temperatures in the absence of oxygen.

(d) Chemical decomposition of organic materials at low temperatures in the presence of oxygen.

11. With reference to UN Treaty on High Seas, consider the following statements :

1. The high seas are areas of the ocean that are immediately beyond a country's territorial waters and are not under any country's jurisdiction.
2. The treaty is a legally binding international agreement being developed within the framework of the United Nations Convention on the Law of the Sea (UNCLOS).

Which of the statements given above is/are correct?

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

12. With reference to One web India-2 mission, consider the following statements :

1. Launch Vehicle Mark-3 (LVM-3) is the carrier vehicle for this broadband constellation.
2. It operates in a Low Earth Orbit (LEO) Polar Orbit.
3. It offers low-latency solutions.

How many of the above statements are correct?

(a) Only one *(b)* Only two

(c) All three *(d)* None

13. Consider the following statements :

Statement-I :

International Women's Day is celebrated annually on 8th March to raise awareness about women's equality.

Statement-II :

On 8th March, 1911 International Women's Day was first celebrated by Clara Zetkin.

Which one of the following is correct in respect of the above statements?

(a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I

(b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I

(c) Statement-I is correct but Statement-II is incorrect

(d) Statement-I is incorrect but Statement-II is correct

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14. निम्नलिखित देशों पर विचार कीजिये:

1. बहरीन
2. इराक
3. जॉर्डन
4. कुवैत
5. ईरान
6. ओमान

उपर्युक्त में से कितने देश सऊदी अरब के साथ स्थल सीमा साझा करते हैं?

(a) केवल दो
(b) केवल तीन
(c) केवल चार
(d) केवल पाँच

15. भारत-ऑस्ट्रेलिया संबंध के संदर्भ में निम्नलिखित कथनों पर विचार कीजिये:

1. 2+2 वार्ता प्रणाली दोनों की व्यापक सामरिक साझेदारी का हिस्सा है।
2. दोनों देश पारस्परिक रसद समर्थन समझौते के पक्षकार हैं।
3. भारत और ऑस्ट्रेलिया शंघाई सहयोग संगठन (SCO) के सदस्य हैं।

उपर्युक्त में से कितने कथन सही हैं?

(a) केवल एक
(b) केवल दो
(c) सभी तीन
(d) कोई भी नहीं

16. इथेनॉल के संदर्भ में निम्नलिखित पर विचार कीजिये:

1. इथेनॉल कम प्रदूषणकारी है और पेट्रोल की तुलना में कम लागत पर समान दक्षता प्रदान करता है।
2. भारत सरकार का वर्ष 2035 तक पेट्रोल में 20% इथेनॉल सम्मिश्रण का लक्ष्य है।

उपर्युक्त कथनों में से कौन-सा/से सही है/हैं?

(a) केवल 1
(b) केवल 2
(c) 1 और 2 दोनों
(d) न तो 1 और न ही 2

17. निम्नलिखित में से कौन-सा 'काराकोरम विसंगति' का सर्वोत्तम वर्णन करता है?

(a) वैश्विक तापन के कारण काराकोरम क्षेत्र में असामान्य रूप से हिमनद की मात्रा में तेज़ गिरावट देखी गई।
(b) काराकोरम श्रेणी में हिमनदों की मोटाई और द्रव्यमान में रहस्यमय और असंगत वृद्धि हुई है, जबकि आसपास के क्षेत्रों में हिमनद पीछे हट रहे हैं।
(c) काराकोरम क्षेत्र में अत्यधिक तापमान में उतार-चढ़ाव के कारण बदलते मौसम के प्रारूप का वर्णन करने के लिये उपयोग किया जाने वाला पद है।
(d) काराकोरम पर्वत की अद्वितीय भूवैज्ञानिक संरचना ने उन्हें क्षरण के प्रति असाधारण रूप से प्रतिरोधी बना दिया है।

18. "ग्लोबल अस्सैस्मेंट ऑफ सोइल कार्बन इन ग्रासलैंड" रिपोर्ट के संदर्भ में, निम्नलिखित पर विचार कीजिये:

1. इसको खाद्य एवं कृषि संगठन (FAO) द्वारा जारी किया जाता है।
2. रिपोर्ट के अनुसार, दुनिया के अधिकांश घास के मैदानों में नकारात्मक कार्बन संतुलन है।

उपर्युक्त कथनों में से कौन-सा/से सही है/हैं?

(a) केवल 1
(b) केवल 2
(c) 1 और 2 दोनों
(d) न तो 1 और न ही 2

19. निम्नलिखित कथनों पर विचार कीजिये:

1. भारतीय भूवैज्ञानिक सर्वेक्षण (GSI) संरक्षण और रखरखाव के लिये भू-विरासत स्थलों तथा राष्ट्रीय भूवैज्ञानिक स्मारकों की घोषणा करता है।
2. भू-विरासत स्थलों को यूनेस्को के ग्लोबल जियोपार्क कार्यक्रम के तहत घोषित किया जाता है।

उपर्युक्त कथनों में से कौन-सा/से सही है/हैं?

(a) केवल 1
(b) केवल 2
(c) 1 और 2 दोनों
(d) न तो 1 और न ही 2

20. पैंगोलिन के संदर्भ में निम्नलिखित पर विचार कीजिये:

1. वे रात्रिचर कृंतक हैं।
2. भारतीय और चीनी दोनों पैंगोलिन, वन्यजीव (संरक्षण) अधिनियम 1972 की अनुसूची 1 के अंतर्गत संरक्षित हैं।
3. संकट की स्थिति में ये जीव, सुरक्षा के लिये स्वयं को गेंद की भाँति सिकोड़ सकते हैं।

उपर्युक्त में से कितने कथन सही हैं?

(a) केवल एक
(b) केवल दो
(c) सभी तीन
(d) कोई भी नहीं

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14. Consider the following countries:

1. Bahrain
2. Iraq
3. Jordan
4. Kuwait
5. Iran
6. Oman

How many of the above-mentioned countries share a land border with Saudi Arabia?

(a) Only two *(b)* Only three
(c) Only four *(d)* Only five

15. With reference to India-Australia relation, consider the following statements:

1. The 2+2 Dialogue Mechanism is part of their Comprehensive Strategic Partnership.
2. Both the countries are parties to the Mutual Logistics Support Agreement.
3. India and Australia are members of Shanghai Cooperation Organisation (SCO).

How many of the above statements are correct?

(a) Only one *(b)* Only two
(c) All three *(d)* None

16. With reference to Ethanol, consider the following:

1. Ethanol is less polluting and offers equivalent efficiency at a lower cost than petrol.
2. The Government of India has a target for 20% ethanol blending in petrol by 2035.

Which of the statements given above is/are correct?

(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

17. Which of the following best describes 'Karakoram anomaly'?

(a) An unusual, rapid decline in the glacier volume observed in the Karakoram region due to global warming.
(b) A mysterious and unexplained increase in the thickness and mass of glaciers in the Karakoram range while surrounding regions experience glacier retreat.
(c) A term used to describe the shifting weather patterns in the Karakoram region causing extreme temperature fluctuations.
(d) The unique geological formation of the Karakoram Mountains that has made them exceptionally resistant to erosion.

18. With reference to Global Assessment of Soil Carbon in Grasslands, consider the following:

1. It is released by the Food and Agriculture Organization (FAO).
2. As per report, most of the world's grasslands have a negative carbon balance.

Which of the statements given above is/are correct?

(a) 1 only *(b)* 2 only
(c) Both 1 and 2 *(d)* Neither 1 nor 2

19. Consider the following statements:

1. Geological Survey of India (GSI) declares geo-heritage sites and national geological monuments for protection and maintenance.
2. Geo heritage sites are declared under UNESCO's Global Geoparks program.

Which of the statements given above is/are correct?

(a) 1 only *(b)* 2 only
(c) Both 1 and 2 *(d)* Neither 1 nor 2

20. With reference to Pangolin, consider the following:

1. They are nocturnal rodents.
2. Both Indian and Chinese, are protected under Schedule 1 of the Wildlife (Protection) Act 1972.
3. When threatened, they can roll into a ball to protect themselves.

How many of the above statements are correct?

(a) Only one
(b) Only two
(c) All three
(d) None

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21. लिक्विड नैनो यूरिया (LNU) के संदर्भ में, निम्नलिखित कथनों पर विचार कीजिये:

1. पारंपरिक यूरिया की दक्षता लगभग 25% है जबकि LNU की दक्षता 100% तक हो सकती है।
2. लिक्विड नैनो यूरिया का छिड़काव प्रत्यक्ष रूप से पत्तियों पर किया जाता है जिसे पौधे द्वारा अवशोषित कर लिया जाता है।
3. इसका उत्पादन भारतीय कृषि अनुसंधान परिषद (ICAR) द्वारा किया गया।

उपर्युक्त में से कितने कथन सही हैं?

(a) केवल एक
(b) केवल दो
(c) सभी तीन
(d) कोई भी नहीं

22. भारत की कार्बन क्रेडिट ट्रेडिंग योजना, 2023 (CCTS 2023) के संदर्भ में निम्नलिखित कथनों पर विचार कीजिये:

1. ऊर्जा दक्षता ब्यूरो (BEE) ग्रीनहाउस गैस उत्सर्जन प्रक्षेप पथ के विकास एवं बाध्य संस्थाओं के लक्ष्यों के लिये उत्तरदायी है।
2. केंद्रीय विद्युत नियामक आयोग (CERC) कार्बन क्रेडिट प्रमाणपत्रों के व्यापार का नियामक है।
3. एक कार्बन क्रेडिट प्रमाणपत्र एक सौ टन CO2e (कार्बन डाइऑक्साइड समतुल्य) के बराबर है।

उपर्युक्त में से कितने कथन सही हैं?

(a) केवल एक
(b) केवल दो
(c) सभी तीन
(d) कोई भी नहीं

23. व्यापार योग्य वस्तु के रूप में कार्बन क्रेडिट और कार्बन ऑफसेट की अवधारणा सबसे पहले आई

(a) वियना अभिसमय से
(b) कार्टाजेना प्रोटोकॉल से
(c) क्योटो प्रोटोकोल से
(d) पेरिस समझौता से

24. एशियाई शेरों के संदर्भ में निम्नलिखित कथनों पर विचार कीजिये:

1. यह केवल भारत के वनों में ही पाए जाते है।
2. यह अफ्रीकी शेरों की तुलना में थोड़े छोटे होते हैं।
3. मरुस्थल राष्ट्रीय उद्यान को एशियाई शेरों के दूसरे अधिवास के रूप में विकसित करने का प्रस्ताव है।

उपर्युक्त में से कितने कथन सही हैं?

(a) केवल एक *(b)* केवल दो
(c) सभी तीन *(d)* कोई भी नहीं

25. निम्नलिखित में से किस देश ने कार्बन डाइऑक्साइड को अवशोषित करने के लिये कृत्रिम "लिक्विड ट्री" बनाए हैं जिन्हें LIQUID-3 भी कहा जाता है?

(a) चीन
(b) रूस
(c) इज़रायल
(d) सर्बिया

26. दूसरी पीढ़ी के जैव ईंधन प्राप्त किये जा सकते हैं

1. काष्ठ से
2. घास से
3. चुकंदर से
4. सूक्ष्म शैवाल से
5. आनुवंशिकत: रूपांतरित जीव से

उपर्युक्त में से कितने कथन सही हैं?

(a) केवल दो
(b) केवल तीन
(c) केवल चार
(d) सभी पाँच

27. संयुक्त राष्ट्र (UN) जल सम्मेलन 2023 के संदर्भ में निम्नलिखित कथनों पर विचार कीजिये:

1. सम्मेलन में प्रतिभागी देशों के लिये बाध्यकारी प्रतिबद्धताएँ निर्धारित की गईं।
2. अर्जेंटीना में हुए सम्मेलन के बाद यह जल को समर्पित संयुक्त राष्ट्र का दूसरा सम्मेलन है।

उपर्युक्त कथनों में से कौन-सा/से सही है/हैं?

(a) केवल 1
(b) केवल 2
(c) 1 और 2 दोनों
(d) न तो 1 और न ही 2

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21. With reference to Liquid Nano Urea (LNU), consider the following statements:

1. Conventional urea has an efficiency of about 25%, the efficiency of LNU can be as high as 100%.
2. Liquid nano urea is sprayed directly on the leaves and gets absorbed by the plant.
3. It is developed by the Indian Council of Agricultural Research (ICAR) .

How many of the above statements are correct?

(a) Only one
(b) Only two
(c) All three
(d) None

22. Consider the following statements with reference to India's Carbon Credit Trading Scheme, 2023 (CCTS 2023):

1. The Bureau of Energy Efficiency (BEE) is responsible for the development of the greenhouse gas emissions trajectory and the targets for the entities to be obligated.
2. The Central Electricity Regulatory Commission (CERC) is the regulator for the trading of carbon credit certificates.
3. One carbon credit certificate is equivalent to one hundred tonne of CO2e (carbon dioxide equivalent).

How many of the above statements are correct ?

(a) Only one
(b) Only two
(c) All three
(d) None

23. The concept of carbon credit and carbon offset as tradeable good first came from

(a) Vienna Convention
(b) Cartegena protocol
(c) Kyoto Protocol
(d) Paris Agreement

24. Consider the following statements with reference to Asiatic Lions:

1. They are found in the wild only in India.
2. Thye are slightly smaller than African lions.
3. Desert National Park is proposed to be developed as a second home for Asiatic lions.

How many of the above statements are correct ?

(a) Only one *(b)* Only two
(c) All three *(d)* None

25. Which of the following countries has created artificial "liquid trees" also known as LIQUID 3 to capture carbon dioxide?

(a) China
(b) Russian
(c) Israel
(d) Serbia

26. Second-generation biofuels are derived from

1. Wood 2. Grass
3. Sugar beet 4. Microalgae
5. Genetically modified organisms

How many of the above-mentioned are correct?

(a) Only two
(b) Only three
(c) Only Four
(d) All Five

27. Consider the following statements with reference to United Nations (UN) Water Conference 2023:

1. The conference set binding commitments to the participating countries.
2. This is only the second UN Conference dedicated to water, following the conference in Argentina.

Which of the statements given above is/are correct?

(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

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28. निम्नलिखित पर विचार कीजिये:

1. स्ट्रैटोस्फेरिक एरोसोल इंजेक्शन
2. एरोसोल स्प्रे
3. क्लोरोफ्लोरोकार्बन
4. मिथाइल क्लोरोफॉर्म
5. हैलोन

उपर्युक्त में से कितने समताप मंडल में ओज़ोन परत को प्रभावित करते हैं?

(a) केवल दो *(b)* केवल तीन
(c) केवल चार *(d)* सभी पाँच

29. मीठे पानी की दीपोर बील झील स्थित है

(a) असम *(b)* त्रिपुरा
(c) मिज़ोरम *(d)* सिक्किम

30. निम्नलिखित कथनों पर विचार कीजिये:

1. राज्य सरकार, भारतीय वन अधिनियम, 1927 के तहत किसी भी वन को आरक्षित और संरक्षित वन के रूप में अधिसूचित कर सकती है।
2. वन (संरक्षण) अधिनियम, 1980 के तहत केंद्र सरकार की अनुमति के बिना गैर-वन उद्देश्यों के लिये वन भूमि के उपयोग पर प्रतिबंध है।

उपर्युक्त कथनों में से कौन-सा/से सही है/हैं?

(a) केवल 1 *(b)* केवल 2
(c) 1 और 2 दोनों *(d)* न तो 1 और न ही 2

31. पश्चिमी घाट के संदर्भ में निम्नलिखित कथनों पर विचार कीजिये:

1. यह एक यूनेस्को (UNESCO) विश्व धरोहर स्थल है।
2. यह विश्व में जैविक विविधता के "सबसे प्रमुख जैव विविधता तप्त स्थलों" में से एक है।
3. इसमें गुजरात, महाराष्ट्र, गोवा, कर्नाटक, केरल और तमिलनाडु राज्य शामिल हैं।

उपर्युक्त में से कितने कथन सही हैं?

(a) केवल एक
(b) केवल दो
(c) सभी तीन
(d) कोई भी नहीं

32. निम्नलिखित कथनों पर विचार कीजिये:

1. छठी पीढ़ी (6G) की वायरलेस तकनीक, 5G नेटवर्क की तुलना में अधिक आवृत्तियों का उपयोग करने में सक्षम होगी।
2. टेराहर्ट्ज़ तरंगें विद्युत चुंबकीय स्पेक्ट्रम पर अवरक्त तरंगों और सूक्ष्मतरंगों के मध्य आपतित होती है।

ऊपर्युक्त कथनों में से कौन-सा/से सही है/हैं?

(a) केवल 1 *(b)* केवल 2
(c) 1 और 2 दोनों *(d)* न तो 1 और न ही 2

33. DNA वैक्सीन के संदर्भ में निम्नलिखित कथनों पर विचार कीजिये:

1. इसमें DNA के एक छोटे-से हिस्से का उपयोग किया जाता है जो एक विशिष्ट प्रतिजन हेतु रोगजनक से प्रतिरक्षा प्रतिक्रिया को त्वरित करने के लिये कोड करता है।
2. ZyCoV-D विश्व की पहली और भारत की स्वदेशी तौर पर विकसित DNA आधारित COVID-19 वैक्सीन है।
3. यह तीसरी पीढ़ी की वैक्सीन है।

उपर्युक्त में से कितने कथन सही हैं?

(a) केवल एक *(b)* केवल दो
(c) सभी तीन *(d)* कोई भी नहीं

34. निम्नलिखित कथनों पर विचार कीजिये:

1. एडीज इजिप्टी जीका संक्रमण और डेंगू को संवाहित करता है।
2. डेंगवाक्सिया जीवित, क्षीण डेंगू वायरस से निर्मित वैक्सीन है।

उपर्युक्त कथनों में से कौन-सा/से सही है/हैं?

(a) केवल 1 *(b)* केवल 2
(c) 1 और 2 दोनों *(d)* न तो 1 और न ही 2

35. जेम्स वेब स्पेस टेलीस्कोप (JWST) के संदर्भ में, निम्नलिखित कथनों पर विचार कीजिये:

1. यह NASA, यूरोपीय अंतरिक्ष एजेंसी (ESA) और जापान एयरोस्पेस एक्सप्लोरेशन एजेंसी (JAXA) के बीच एक अंतर्राष्ट्रीय सहयोग है।
2. इसका उद्देश्य ब्रह्मांड के इतिहास को उजागर करना है।

उपर्युक्त में से कौन-सा/से कथन सही है/हैं?

(a) केवल 1 *(b)* केवल 2
(c) 1 और 2 दोनों *(d)* न तो 1 और न ही 2

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28. Consider the following:

1. Stratospheric aerosol injection
2. Aerosol sprays
3. Chlorofluorocarbons
4. Methyl chloroform
5. Halons

How many of the above affects the ozone layer in the stratosphere?

(a) Only two *(b)* Only three
(c) Only four *(d)* All five

29. Deepor Beel the freshwater lakes is situated in

(a) Assam *(b)* Tripura
(c) Mizoram *(d)* Sikkim

30. Consider the following statements:

1. State Government can notify any forest as reserved and protected forest under Indian Forest Act, 1927.
2. There is a restriction on the use of forest land for non-forest purposes without the permission of central government under the Forest (Conservation) Act, 1980.

Which of the statements given above is/are correct?

(a) 1 only *(b)* 2 only
(c) Both 1 and 2 *(d)* Neither 1 nor 2

31. Consider the following statements with reference to Western Ghats:

1. It is a UNESCO World Heritage Site.
2. It is one of the "hottest hotspots" of biological diversity in the world.
3. It covers states of Gujarat, Maharashtra, Goa, Karnataka, Kerala, and Tamil Nadu.

How many of the above statements are correct?

(a) Only one
(b) Only two
(c) All three
(d) None

32. Consider the following statements:

1. Sixth-Generation (6G) Wireless technology will be able to use higher frequencies than 5G networks.
2. Terahertz waves fall between infrared waves and microwaves on the electromagnetic spectrum.

Which of the statements given above is/are correct?

(a) 1 only *(b)* 2 only
(c) Both 1 and 2 *(d)* Neither 1 nor 2

33. With reference to DNA vaccine, consider the following statements:

1. It uses a small piece of DNA that codes for a specific antigen from a pathogen.
2. The ZyCoV-D is the world's first and India's indigenously developed DNA based vaccine for COVID-19.
3. It is a third-generation vaccine.

How many of the above statements are correct?

(a) Only one *(b)* Only two
(c) All three *(d)* None

34. Consider the following statements:

1. Aedes aegypti transmits Zika infection and dengue.
2. Dengvaxia is a live attenuated vaccine.

Which of the statements given above is/are correct?

(a) 1 only *(b)* 2 only
(c) Both 1 and 2 *(d)* Neither 1 nor 2

35. With reference to James Webb Space Telescope (JWST), consider the following statements:

1. It is an international collaboration between NASA, the European Space Agency (ESA) and the Japan Aerospace Exploration Agency (JAXA).
2. It aims to uncover the history of the universe.

Which of the statements given above is/are correct?

(a) 1 only *(b)* 2 only
(c) Both 1 and 2 *(d)* Neither 1 nor 2

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36. सिंगरेनी ताप विद्युत संयंत्र (STPP) के संदर्भ में निम्नलिखित कथनों पर विचार कीजिये:

1. यह कोयला आधारित विद्युत उत्पादन संयंत्र दक्षिणी राज्य आंध्र प्रदेश में है।
2. यह देश के राज्य सार्वजनिक उपक्रमों में पहला है जिसके पास फ्लू गैस डिसल्फराइज़ेशन (FGD) संयंत्र है।

उपर्युक्त में से कौन-सा/से कथन सही है/हैं?

(a) केवल 1 *(b)* केवल 2
(c) 1 और 2 दोनों *(d)* न तो 1 और न ही 2

37. जैव रासायनिक ऑक्सीजन मांग (BOD) के संदर्भ में, निम्नलिखित कथनों पर विचार कीजिये:

1. यह जल में कार्बनिक और अकार्बनिक यौगिकों को ऑक्साइड बनाने के लिये आवश्यक ऑक्सीजन की मात्रा है।
2. BOD का उच्च मान जल में कम घुलनशील ऑक्सीजन सामग्री को इंगित करता है।
3. यह जल प्रदूषण मापने का एक विश्वसनीय तरीका है।

उपर्युक्त में से कितने कथन सही हैं?

(a) केवल एक *(b)* केवल दो
(c) सभी तीन *(d)* कोई भी नहीं

38. निम्नलिखित कथनों पर विचार कीजिये:

1. रमन प्रभाव प्रकाश की तरंग दैर्ध्य में परिवर्तन है जो तब होता है जब प्रकाश किरण अणुओं द्वारा विक्षेपित होती है।
2. स्पेक्ट्रोस्कोपी, पदार्थ और विद्युत चुंबकीय विकिरण के मध्य परस्पर क्रिया का अध्ययन है।

उपर्युक्त कथनों में से कौन-सा/से सही है/हैं?

(a) केवल 1 *(b)* केवल 2
(c) 1 और 2 दोनों *(d)* न तो 1 और न ही 2

39. खगोल विज्ञान के संदर्भ में 'बिग डिपर' शब्द है

(a) तारामंडल उर्सा मेजर में तारों का एक समूह है।
(b) एक छोटा, बर्फीला पिंड जो अंतरिक्ष में गतिमान है।
(c) एक प्राकृतिक उपग्रह जो किसी ग्रह की परिक्रमा करता है।
(d) अंतरिक्ष में गैस और धूल का एक विशाल बादल जिससे तारों और ग्रह तंत्रों का निर्माण होता है।

40. निम्नलिखित युग्मों पर विचार कीजिये:

मुद्राएँ		*प्रतीक*
1. वरद मुद्रा	:	ज्ञान का संचरण और बुद्ध की शिक्षाओं का संचार।
2. अभय मुद्रा	:	निर्भयता, सुरक्षा और नकारात्मकता को दूर करना।
3. भूमिस्पर्श मुद्रा	:	आत्मज्ञान की प्राप्ति।

उपर्युक्त में से कितने युग्म सही सुमेलित हैं?

(a) केवल एक *(b)* केवल दो
(c) सभी तीन *(d)* कोई भी नहीं

41. "भारत में महिला और पुरुष रिपोर्ट 2022" निम्नलिखित में से किसके द्वारा जारी की गई है?

(a) सांख्यिकी और कार्यक्रम कार्यान्वयन मंत्रालय
(b) सामाजिक न्याय और अधिकारिता मंत्रालय
(c) स्वास्थ्य एवं परिवार कल्याण मंत्रालय
(d) महिला एवं बाल विकास मंत्रालय

42. भारत में प्रमुख दर्रों के संदर्भ में निम्नलिखित कथनों पर विचार कीजिये:

1. जोज़िला दर्रा पूर्वी हिमालय श्रेणी में अवस्थित है।
2. रोहतांग दर्रा पीर पंजाल श्रेणी में अवस्थित है।

उपर्युक्त कथनों में से कौन-सा/से सही है/हैं?

(a) केवल 1 *(b)* केवल 2
(c) 1 और 2 दोनों *(d)* न तो 1 और न ही 2

43. निम्नलिखित विवरणों पर विचार कीजिये:

1. इसमें रेडियोधर्मी तत्त्व होते हैं
2. उर्वरक निर्माण से निकलने वाला एक अपशिष्ट उत्पाद
3. सड़क निर्माण में उपयोग किया जाता है
4. सौंदर्य प्रसाधन उत्पादों में व्यापक रूप से उपयोग किया जाता है

फॉस्फोर-जिप्सम के संदर्भ में उपर्युक्त में से कितने सही हैं?

(a) केवल एक
(b) केवल दो
(c) केवल तीन
(d) सभी चार

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36. Consider the following statements with reference to Singareni Thermal Power Plant (STPP):

1. This coal-based power generating station is in southern state of Andhra Pradesh.
2. It is the first among the State PSUs in the country to have a Flu Gas Desulphurization (FGD) plant.

Which of the statements given above is/are correct?

(a) 1 only *(b)* 2 only
(c) Both 1 and 2 *(d)* Neither 1 nor 2

37. With reference to Biological Oxygen Demand (BOD), consider the following statements:

1. It is the amount of oxygen required to oxidise organic and inorganic compounds in the water.
2. Higher value of BOD indicates low dissolved oxygen content of water.
3. It is a reliable method of measuring water pollution.

How many of the above statements are correct?

(a) Only one *(b)* Only two
(c) All three *(d)* None

38. Consider the following statements:

1. Raman effect is the change in the wavelength of light that occurs when a light beam is deflected by molecules.
2. Spectroscopy is the study of the interaction between matter and electromagnetic radiation.

Which of the statements given above is/are correct?

(a) 1 only *(b)* 2 only
(c) Both 1 and 2 *(d)* Neither 1 nor 2

39. In the context of astronomy, the term 'Big Dipper' is

(a) an asterism of stars, in the constellation Ursa Major.
(b) a small, icy body that travels through space.
(c) a natural satellite that orbits a planet.
(d) a giant cloud of gas and dust in space from which stars and planetary systems form.

40. Consider the following pairs:

Mudras		*Symbolises*
1. Varada Mudra	:	transmission of knowledge and the communication of the Buddha's teachings.
2. Abhaya Mudra	:	fearlessness, protection, and the dispelling of negativity.
3. Bhumisparsha Mudra	:	attainment of enlightenment.

How many of the above pairs are correctly matched?

(a) Only one *(b)* Only two
(c) All three *(d)* None

41. "Women and Men in India 2022 report" is released by which of the following?

(a) Ministry of Statistics and Programme Implementation
(b) Ministry of Social Justice and Empowerment
(c) Ministry of Health and Family Welfare
(d) Ministry of Women and Child Development

42. With reference to the major passes in India, consider the following statements:

1. Zoji La Pass is located in the Eastern Himalayan Range.
2. Rohtang Pass is located in the Pir Pinjal Range.

Which of the statements given above is/are correct?

(a) 1 only *(b)* 2 only
(c) Both 1 and 2 *(d)* Neither 1 nor 2

43. Consider the following particulars:

1. Contains radioactive elements
2. Waste product from manufacturing fertilizer
3. Used in road construction
4. Extensively used in beauty products

How many of the above are correct with reference to Phosphor-gypsum?

(a) Only one
(b) Only two
(c) Only three
(d) All four

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44. निम्नलिखित कथनों पर विचार कीजिये:

कथन-I:

वायुमंडलीय प्रदूषण को मुख्यत: क्षोभमंडलीय प्रदूषण के रूप में अध्ययन किया जाता है।

कथन-II:

क्षोभमंडल अवांछनीय ठोस अथवा गैसीय कणों का एक अशांत क्षेत्र है, जिसमें वायु, अधिक जलवाष्प तथा मेघ उपस्थित होते हैं।

उपर्युक्त कथनों के बारे में, निम्नलिखित में से कौन-सा सही है?

(a) कथन-I और कथन-II दोनों सही हैं तथा कथन-II, कथन-I की सही व्याख्या है

(b) कथन-I और कथन-II दोनों सही हैं तथा कथन-II, कथन-I की सही व्याख्या नहीं है

(c) कथन-I सही है किंतु कथन-II गलत है

(d) कथन-I गलत है किंतु कथन-II सही है

45. निम्नलिखित कथनों पर विचार कीजिये:

1. सल्फर डाइऑक्साइड मनुष्य एवं जंतुओं दोनों के लिये विषाक्त है।
2. नाइट्रेट मृदा विषाक्त पदार्थ के रूप में कार्य करती है।
3. कार्बन मोनोऑक्साइड में अंगों तथा ऊतकों में ऑक्सीजन के प्रवाह को बाधित करने की क्षमता होती है।

उपर्युक्त कथनों में से कौन-सा/से सही है/हैं?

(a) केवल 1 और 2 *(b)* केवल 2 और 3

(c) केवल 1 और 3 *(d)* 1, 2 और 3

46. कार्बन डाइऑक्साइड के संदर्भ में निम्नलिखित कथनों पर विचार कीजिये:

1. यह केवल क्षोभमंडल तक ही सीमित है।
2. यह श्वसन और चूना पत्थर के अपघटन द्वारा वायुमंडल में निर्गमित होती है।

उपर्युक्त कथनों में से कौन-सा/से सही है/हैं?

(a) केवल 1

(b) केवल 2

(c) 1 और 2 दोनों

(d) न तो 1 और न ही 2

47. निम्नलिखित कथनों पर विचार कीजिये:

1. वर्षा जल का pH मान उदासीन होता है।
2. जब pH मान 7 से कम हो जाता है, तो वर्षा जल अम्लीय वर्षा में परिवर्तित हो जाता है।

उपर्युक्त कथनों में से कौन-सा/से सही है/हैं?

(a) केवल 1 *(b)* केवल 2

(c) 1 और 2 दोनों *(d)* न तो 1 और न ही 2

48. निम्नलिखित विवरणों पर विचार कीजिये:

1. नाइट्रोजन डाइऑक्साइड के उत्सर्जन को कम करना
2. प्राकृतिक गैस का अधिक उपयोग करना
3. मृदा में चूर्णीय चूना- पत्थर मिलाना
4. कार में उत्प्रेरकीय परिवर्तक का उपयोग करना

उपर्युक्त में से कितने उपाय अम्लीय वर्षा को कम करने के लिये हैं?

(a) केवल एक *(b)* केवल दो

(c) केवल तीन *(d)* सभी चार

49. पार्टिकुलेट्स (कणिकीय) के संदर्भ में निम्नलिखित पर विचार कीजिये:

1. कवक, फफूँद, धूल और शैवाल वातावरण में कणिकीय निर्माण करते हैं।
2. मनुष्य को वायु में पाए जाने वाले सभी पार्टिकुलेट्स (कणिकीय) से एलर्जी होती है।

उपर्युक्त कथनों में से कौन-सा/से सही है/हैं?

(a) केवल 1 *(b)* केवल 2

(c) 1 और 2 दोनों *(d)* न तो 1 और न ही 2

50. निम्न पर विचार कीजिये:

1. शीत आर्द्र जलवायु
2. उष्ण, शुष्क, धूपमयी जलवायु
3. धूम, कोहरे और सल्फर डाइऑक्साइड का मिश्रण
4. ऑक्सीकारक अभिकर्मकों की उच्च सांद्रता

सामान्य धूम कोहरा के लिये उपर्युक्त में से कितनी स्थितियाँ आवश्यक हैं?

(a) केवल एक *(b)* केवल दो

(c) केवल तीन *(d)* सभी चार

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44. Consider the following statements:

Statement-I:

Atmospheric pollution is generally studied as tropospheric pollution.

Statement-II:

Troposphere is a turbulent zone of dust, air, water vapour, clouds and undesirable solid or gaseous particles.

Which one of the following is correct in respect of the above statements?

(a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I

(b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I

(c) Statement-I is correct but Statement-II is incorrect

(d) Statement-I is incorrect but Statement-II is correct

45. Consider the following statements:

1. Sulphur dioxide is poisonous to both plants and animals.
2. Nitrate acts as soil toxicant.
3. Carbon monoxide blocks the delivery of oxygen to the organs and tissues.

Which of the statements given above is/are correct?

(a) 1 and 2 only *(b)* 2 and 3 only

(c) 1 and 3 only *(d)* 1, 2 and 3

46. With reference to carbon dioxide, consider the following statements:

1. It is confined to the troposphere only.
2. It is released into the atmosphere by respiration and decomposition of limestone.

Which of the statements given above is/are correct?

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

47. Consider the following statements:

1. The pH of rainwater is neutral.
2. When the pH drops below 7, the rainwater turns to acid rain.

Which of the statements given above is/are correct?

(a) 1 only *(b)* 2 only

(c) Both 1 and 2 *(d)* Neither 1 nor 2

48. Consider the following particulars:

1. Reducing the emission of nitrogen dioxide
2. Using more of natural gas
3. Adding powdered limestone to soil
4. Using catalytic converter in vehicles

How many of the above are the ways to reduce the formation of acid rain?

(a) Only one *(b)* Only two

(c) Only three *(d)* All four

49. With reference to Particulates, consider the following:

1. Fungi, moulds, dust and algae form the particulates in the atmosphere.
2. Human beings are allergic to all particulates found in air.

Which of the statements given above is/are correct?

(a) 1 only *(b)* 2 only

(c) Both 1 and 2 *(d)* Neither 1 nor 2

50. Consider the following:

1. Cool humid climate
2. Warm, dry, sunny climate
3. Mixture of smoke, fog and sulphur dioxide
4. High concentration of oxidising agent

How many of the above conditions are required for the classical smog?

(a) Only one *(b)* Only two

(c) Only three *(d)* All four

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51. चक्रीय अर्थव्यवस्था के संदर्भ में निम्नलिखित कथनों पर विचार कीजिये:

1. यह संसाधनों के निष्कर्षण तथा उपभोग को अधिकतम करता है।
2. यह अपशिष्ट को कम करता है और संसाधन दक्षता को बढ़ावा देता है।
3. इसका उद्देश्य पर्यावरण संबंधी विनियमों को कम करना है।

उपर्युक्त में से कितने कथन सही हैं?

(a) केवल एक *(b)* केवल दो
(c) सभी तीन *(d)* कोई भी नहीं

52. भारत में भौमजल प्रदूषण के संदर्भ में निम्नलिखित कथनों पर विचार कीजिये:

1. सिंचाई के लिये भौमजल का अत्यधिक दोहन भौमजल प्रदूषण का एक प्रमुख कारण है।
2. भौमजल के अत्यधिक दोहन से कृषि से उर्वरक और कीटनाशक जैसे प्रदूषक भौमजल में प्रवेश कर सकते हैं।

उपर्युक्त कथनों में से कौन-सा/से सही है/हैं?

(a) केवल 1
(b) केवल 2
(c) 1 और 2 दोनों
(d) न तो 1 और न ही 2

53. पारिस्थितिक संवेदी क्षेत्र (Eco Sensitive Zones–ESZ) के संदर्भ में, निम्नलिखित कथनों पर विचार कीजिये:

1. वे संरक्षित क्षेत्रों के आसपास आघात अवशोषक के रूप में कार्य करते हैं।
2. वे मानव-पशु संघर्ष को कम करके स्वस्थाने संरक्षण में सहायता करते हैं।
3. इन्हें वन्यजीव संरक्षण अधिनियम 1972 के तहत पारिस्थितिक रूप से महत्त्वपूर्ण क्षेत्रों के रूप में अधिसूचित किया गया है।

उपर्युक्त में से कितने कथन सही हैं?

(a) केवल एक
(b) केवल दो
(c) सभी तीन
(d) कोई भी नहीं

54. प्रोसोपिस चिलेंसिस (Prosopis Chilensis) नामक पौधे को कभी-कभी समाचारों में क्यों उल्लिखित किया जाता है?

(a) इसका अर्क सौंदर्य प्रसाधनों में व्यापक रूप से उपयोग किया जाता है।
(b) इसके अर्क का उपयोग कीटनाशकों के संश्लेषण में किया जाता है।
(c) यह प्रयोगशाला में विकसित किये गए मांस के लिये कच्चे माल का एक स्रोत है।
(d) यह एक आक्रामक पौधा है जिससे देशी वनस्पति के संक्षोत्रण का खतरा है।

55. निम्नलिखित कथनों पर विचार कीजिये:

1. फ्लाई ऐश में सिलिका, एल्यूमीनियम और कैल्शियम के ऑक्साइड होते हैं।
2. फ्लाई ऐश जल संधारण क्षमता और मिट्टी के वातित्र में सुधार करता है।
3. हाल ही में अंटार्कटिका के अंदरूनी हिमानी परत में फ्लाई ऐश के साक्ष्य पाए गए हैं।

उपर्युक्त कथनों में से कौन-सा/से सही है/हैं?

(a) केवल 1
(b) केवल 2 और 3
(c) केवल 3
(d) 1, 2 और 3

56. राष्ट्रीय बाघ संरक्षण प्राधिकरण (NTCA) के संदर्भ में निम्नलिखित कथनों पर विचार कीजिये:

1. इसका गठन पर्यावरण संरक्षण अधिनियम, 1986 के तहत किया गया है।
2. इसकी स्थापना पर्यावरण, वन एवं जलवायु परिवर्तन मंत्री की अध्यक्षता में की गई है।
3. यह अखिल भारतीय स्तर पर बाघों का आकलन करता है तथा बाघ अभयारण्यों के संचालन की वार्षिक योजना बनाता है।

उपर्युक्त में से कितने कथन सही हैं?

(a) केवल एक
(b) केवल दो
(c) सभी तीन
(d) कोई भी नहीं

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51. With reference to Circular economy, consider the following statements:

1. It maximizes resource extraction and consumption.
2. It reduces waste and promotes resource efficiency.
3. It aims at minimizing environmental regulations.

How many of the above statements are correct?

(a) Only one *(b)* Only two
(c) All three *(d)* None

52. With reference to groundwater pollution in India, consider the following statements:

1. Over-extraction of groundwater for irrigation is a major contributor to groundwater pollution.
2. Excessive pumping of groundwater can lead to the intrusion of contaminants such as fertilizers and pesticides from agriculture, into the groundwater.

Which of the statements given above is/are correct?

(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

53. With reference to Eco Sensitive Zones (ESZs), consider the following statements:

1. They serve as shock absorber around protected areas.
2. They help in in-situ conservation by reducing man-animal conflict.
3. They are notified as ecologically important areas under Wildlife Protection Act 1972.

How many of the above statements are correct?

(a) Only one
(b) Only two
(c) All three
(d) None

54. Why is a plant called Prosopis Chilensis often mentioned in news?

(a) Its extract is widely used in cosmetics.
(b) Its extract is used in synthesis of pesticides.
(c) It is a source of raw material for lab grown meat.
(d) It is an invasive plant threatening to pulverize native vegetation.

55. Consider the following statements:

1. Fly ash contains oxides of silica, aluminium and calcium.
2. Fly ash improves water holding capacity and soil aeration.
3. Recently traces of fly ash have been found in Antarctic ice core.

Which of the statements given above is/are correct?

(a) 1 only
(b) 2 and 3 only
(c) 3 only
(d) 1, 2 and 3

56. With reference to National Tiger Conservation Authority (NTCA), consider the following statements:

1. It is constituted under Environment Protection Act 1986.
2. It is set up under the Chairmanship of the Minister for Environment Forests and Climate Change.
3. It undertakes All India Tiger Estimation and creates annual plan of operations of Tiger Reserves.

How many of the above statements are correct?

(a) Only one
(b) Only two
(c) All three
(d) None

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57. मिशन 50k-EV 4 ECO के संदर्भ में निम्नलिखित कथनों पर विचार कीजिये:

1. इसका उद्देश्य पर्यावरण-अनुकूल कृषि पद्धतियों के माध्यम से मृदा की उत्पादकता को बढ़ाना है।
2. इस मिशन के तहत, भारतीय लघु उद्योग विकास बैंक (SIDBI) पात्र छोटे तथा सीमांत किसानों को जैविक आगतों की खरीद के लिये ऋण प्रदान करेगा।

उपर्युक्त कथनों में से कौन-सा/से सही है/हैं?

(a) केवल 1 *(b)* केवल 2
(c) 1 और 2 दोनों *(d)* न तो 1 और न ही 2

58. हाल ही में चर्चा में रहा प्रयाग (PRAYAG) मंच संबंधित है

(a) नदी जल गुणवत्ता की योजना और निगरानी के लिये रियल टाइम विश्लेषण केंद्र से।
(b) स्कूल छोड़ने वाले अभ्यर्थियों के कौशल विकास के लिये शैक्षिक पहल से।
(c) महानगरीय शहरों में वायु प्रदूषण की निगरानी के लिये ऑनलाइन डैशबोर्ड से।
(d) प्राचीन भारतीय शहरों की लुप्त सांस्कृतिक विरासत को पुन: स्थापित करने की पहल से।

59. कार्बन सीमा समायोजन तंत्र (CBAM) का प्राथमिक लक्ष्य क्या है?

(a) कार्बन-सघन उत्पादों के आयात को प्रोत्साहित करना।
(b) कम कार्बन वाले उत्पादों पर टैरिफ लगाना।
(c) घरेलू उद्योगों को कार्बन रिसाव से बचाना।
(d) पर्यावरणीय विचारों के बिना मुक्त व्यापार को बढ़ावा देना।

60. की-स्टोन प्रजाति के संदर्भ में निम्नलिखित कथनों पर विचार कीजिये:

1. ये किसी अधिवास स्थान की संरचना, कार्यप्रणाली या उत्पादकता में एक विशिष्ट भूमिका निभाते हैं।
2. ये अधिक हिंसक होते हैं जो खाद्य शृंखला में अन्य प्रजातियों को नियंत्रित करते हैं।
3. इनके विलुप्त होने से महत्त्वपूर्ण पारिस्थितिकी तंत्र में परिवर्तन हो सकता है।

उपर्युक्त में से कितने कथन सही हैं?

(a) केवल एक
(b) केवल दो
(c) सभी तीन
(d) कोई भी नहीं

61. भारत की पंचामृत रणनीति के संदर्भ में, निम्नलिखित कथनों पर विचार कीजिये:

1. ऊर्जा की 50 प्रतिशत ज़रूरतें नवीकरणीय स्रोतों से पूरी होंगी।
2. गैर-जीवाश्म ऊर्जा क्षमता को 500 गीगावाट तक पहुँचाने का प्रयास किया जाएगा।
3. कुल अनुमानित कार्बन उत्सर्जन में एक अरब टन की कमी की जाएगी।
4. शुद्ध शून्य उत्सर्जन का लक्ष्य प्राप्त करने का प्रयास किया जाएगा।

वर्ष 2030 तक उपर्युक्त लक्ष्यों में से कितनों को अपनाया जाएगा?

(a) केवल एक
(b) केवल दो
(c) केवल तीन
(d) सभी चार

62. निम्नलिखित कथनों पर विचार कीजिये:

कथन-I:
कार्बन ट्रेडिंग में परमिट खरीदना और बेचना शामिल होता है जो परमिट धारकों को कार्बन डाइऑक्साइड उत्सर्जित करने की अनुमति देता है।

कथन-II:
कार्बन ट्रेडिंग देशों के लिये अपने कार्बन उत्सर्जन को बढ़ाने के लिये एक वित्तीय प्रोत्साहन है।

उपर्युक्त कथनों के बारे में, निम्नलिखित में से कौन-सा एक सही है?

(a) कथन-I और कथन-II दोनों सही हैं तथा कथन-II, कथन-I की सही व्याख्या है
(b) कथन-I और कथन-II दोनों सही हैं तथा कथन-II, कथन-I की सही व्याख्या नहीं है
(c) कथन-I सही है किंतु कथन-II गलत है
(d) कथन-I गलत है किंतु कथन-II सही है

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57. With reference to Mission 50k-EV 4 ECO consider the following statements:

1. It aims to enhance the productivity of soil through eco-friendly agricultural practices.
2. Under this mission, Small Industries Development Bank of India (SIDBI) will provide loans to eligible small and marginal farmers for purchase of organic inputs.

Which of the statements given above is/are correct?

(a) 1 only *(b)* 2 only
(c) Both 1 and 2 *(d)* Neither 1 nor 2

58. PRAYAG Platform recently seen in news is associated with

(a) Real time monitoring centre for planning and monitoring of river water quality.
(b) Educational initiative for skill development of school dropout candidates.
(c) Online dashboard for tracking air pollution in metropolitan cities.
(d) Initiative to reestablish the lost cultural roots of ancient Indian cities.

59. What is the primary goal of a Carbon Border Adjustment Mechanism (CBAM)?

(a) To encourage the import of carbon-intensive products.
(b) To impose tariffs on low-carbon products.
(c) To protect domestic industries from carbon leakage.
(d) To promote free trade without environmental considerations.

60. With reference to Keystone species, consider the following statements:

1. They play a specific role in the structure, functioning, or productivity of a habitat.
2. They are the largest predator that controls other species in the food chain.
3. Their extinction may cause significant ecosystem dysfunction.

How many of the above statements are correct?

(a) Only one
(b) Only two
(c) All three
(d) None

61. With reference to India's Panchamrit Strategy, consider the following statements:

1. Fifty percent of energy requirement will be met from renewable sources.
2. Non-fossil fuel energy capacity will reach 500 Gigawatt.
3. Reduce total projected carbon emissions by one billion tonnes.
4. Achieve the target of Net Zero emissions.

How many of the above targets are to be achieved by 2030?

(a) Only one
(b) Only two
(c) Only three
(d) All four

62. Consider the following statements:

Statement-I:
Carbon trading involves buying and selling permits that allow permit holders to emit carbon dioxide.
Statement-II:
Carbon trading is a financial incentive for countries to increase their carbon emissions.
Which one of the following is correct in respect of the above statements?

(a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
(b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
(c) Statement-I is correct but Statement-II is incorrect
(d) Statement-I is incorrect but Statement-II is correct

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63. ऊर्जा और आर्थिक विकास के संदर्भ में "गैस-आधारित अर्थव्यवस्था" शब्द का क्या अर्थ है?

(a) एक अर्थव्यवस्था जो मुख्य रूप से प्राकृतिक गैस संसाधनों के निर्यात पर निर्भर हो।

(b) एक आर्थिक प्रणाली जो प्रमुख ऊर्जा स्रोत के रूप में प्राकृतिक गैस के उत्पादन और उपयोग पर निर्भर हो।

(c) एक आर्थिक मॉडल जो सतत् विकास के लिये हाइड्रोजन जैसी नवीकरणीय गैसों के उपयोग पर ज़ोर देने वाला हो।

(d) एक आर्थिक रणनीति जो विभिन्न क्षेत्रों से ग्रीनहाउस गैस उत्सर्जन को कम करने पर केंद्रित हो।

64. 'आर्कटिक प्रवर्द्धन' निम्नलिखित में से किस स्थिति को सर्वोत्तम रूप से संदर्भित करता है?

(a) आर्कटिक में ग्रीनहाउस गैस उत्सर्जन के कारण पृथ्वी के औसत तापमान में वृद्धि होती है।

(b) आर्कटिक में समुद्री बर्फ की मात्रा में कमी से सौर विकिरण अवशोषण में वृद्धि होती है।

(c) वह घटना जहाँ आर्कटिक में तापन वैश्विक औसत से अधिक तेज़ी से होता है।

(d) स्थायी तुषार के पिघलने के कारण आर्कटिक में भूकंपीय गतिविधि का प्रवर्द्धन होता है।

65. विश्व मौसम विज्ञान संगठन (WMO) के संदर्भ में, निम्नलिखित कथनों पर विचार कीजिये:

1. यह पृथ्वी के वायुमंडल, भूमि, महासागरों, मौसम और जलवायु के साथ इसके संपर्क से संबंधित अंतर्राष्ट्रीय सहयोग के लिये समर्पित है।
2. यह एक गैर-सरकारी संगठन है जो जलवायु परिवर्तन से संबंधित संगठनों का एक गठन करता है।
3. यह संयुक्त राष्ट्र की एक विशेष एजेंसी है।

उपर्युक्त में से कितने कथन सही हैं?

(a) केवल एक *(b)* केवल दो
(c) सभी तीन *(d)* कोई भी नहीं

66. सूर्य प्रभामंडल (Sun Halo) की घटना के संदर्भ में, निम्नलिखित कथनों पर विचार कीजिये:

1. यह एक बहुरंगी वलय है जो सूर्य को घेरते हुए इंद्रधनुष की तरह दिखाई देता है।
2. यह वायुमंडल में निलंबित हिम स्फटिकों द्वारा सूर्य के प्रकाश के अपवर्तन, प्रकीर्णन और परावर्तन का परिणाम है।

उपर्युक्त कथनों में से कौन-सा/से सही है/हैं?

(a) केवल 1 *(b)* केवल 2
(c) 1 और 2 दोनों *(d)* न तो 1 और न ही 2

67. निम्नलिखित युग्मों पर विचार कीजिये:

जल संदूषक		*स्वास्थ्य समस्याएँ*
1. फ्लोराइड	:	दंतक्षय
2. नाइट्रेट	:	ब्लू बेबी सिंड्रोम
3. लेड	:	प्रजनन तंत्र

उपर्युक्त में से कितने युग्म सही सुमेलित हैं?

(a) केवल एक युग्म *(b)* केवल दो युग्म
(c) सभी तीन युग्म *(d)* कोई भी युग्म नहीं

68. निम्न पर विचार कीजिये:

1. इमली के बीज
2. झिल्ली प्रौद्योगिकी (Membrane technology)
3. मोरिंगा (सहजन) के बीज
4. विद्युत-लेपन (Electroplating)

उपर्युक्त में से कितने जल प्रदूषण के उपचार के तरीके हैं?

(a) केवल एक
(b) केवल दो
(c) केवल तीन
(d) सभी चार

69. निम्नलिखित कथनों पर विचार कीजिये:

1. जैव आवर्द्धन किसी जीव में उसके पूरे जीवन काल में होता है, जिसके परिणामस्वरूप अधिक आयु वाले जीवों में इसकी सांद्रता उच्च होती है।
2. जैवसंचयन तब होता है जब निम्न पोषी स्तर से उच्च पोषी स्तर तक रसायन स्थानांतरित होते हैं, जिसके परिणामस्वरूप आहार शृंखला के शीर्ष पर परभक्षियों में उच्च सांद्रता होती है।

उपर्युक्त कथनों में से कौन-सा/से सही है/हैं?

(a) केवल 1
(b) केवल 2
(c) 1 और 2 दोनों
(d) न तो 1 और न ही 2

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63. What does the term "gas-based economy" refer to in the context of energy and economic development?

(a) An economy primarily dependent on the export of natural gas resources.

(b) An economic system that relies on the production and utilization of natural gas as a major energy source.

(c) An economic model emphasizing the use of renewable gases like hydrogen for sustainable growth.

(d) An economic strategy focused on reducing greenhouse gas emissions from various sectors.

64. 'Arctic amplification' best refers to which one of the following situations?

(a) The increase in the Earth's average temperature due to greenhouse gas emissions in the Arctic.

(b) The decrease in sea ice extent in the Arctic, leading to greater solar radiation absorption.

(c) The phenomenon where warming in the Arctic occurs faster than the global average.

(d) The amplification of seismic activity in the Arctic due to melting permafrost.

65. With reference to World Meteorological Organization (WMO), consider the following statements:

1. It is dedicated to international cooperation related to the earth's atmosphere, its interaction with land, oceans, weather and climate.
2. It is a non-governmental organization constituting a coalition of climate change related organizations.
3. It is a specialized agency of the United Nations.

How many of the above statements are correct?

(a) Only one *(b)* Only two

(c) All three *(d)* None

66. With reference to the phenomenon of Sun halo, consider the following statements:

1. It is a multi-coloured ring that appears like a rainbow encircling the sun.
2. It is the result of the refraction, dispersion, and reflection of sunlight by ice crystals suspended in the atmosphere.

Which of the statements given above is/are correct?

(a) 1 only *(b)* 2 only

(c) Both 1 and 2 *(d)* Neither 1 nor 2

67. Consider the following pairs:

Water contaminants		*Health problems*
1. Fluoride	:	Tooth decay
2. Nitrate	:	Blue baby syndrome
3. Lead	:	Reproductive system

How many of the above pairs are correctly matched?

(a) Only one pair *(b)* Only two pairs

(c) All three pairs *(d)* None of the pairs

68. Consider the following:

1. Tamarind seeds
2. Membrane technology
3. Moringa seeds
4. Electroplating

How many of the above are the ways to treat water pollution?

(a) Only one

(b) Only two

(c) Only three

(d) All four

69. Consider the following statements:

1. Biomagnification takes place in a single organism over the span of its life, resulting in a higher concentration in older individuals.
2. Bioaccumulation takes place as chemicals transfer from lower trophic levels to higher trophic levels within a food web, resulting in a higher concentration in apex predators.

Which of the statements given above is/are correct?

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

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70. निम्नलिखित में से कौन-सा 'सुपोषण' का परिणाम है?

(a) यह एक ऐसी प्रक्रिया है जिसमें पोषक तत्त्वों से समृद्ध जल निकाय सघन पादपों की संख्या का समर्थन करते हैं।

(b) यह मार्जन की एक प्राकृतिक प्रक्रिया है, जो अबाधित जलीय वातावरण में होती है जिसमें जल को मृदा और अन्य प्राकृतिक सामग्रियों की परतों के माध्यम से निस्यंदित किया जाता है।

(c) यह जलीय पारिस्थितिक तंत्र में ऑक्सीजन का अत्यधिक प्रवाह है, जिससे ऑक्सीजन युक्त जल निकाय का निर्माण होता हैं।

(d) यह मुख्य रूप से प्राचीन, अबाधित जलीय वातावरण में होता है जिसमें कोई मानवीय गतिविधि अथवा पोषक तत्त्व नहीं होते हैं।

71. अपरद खाद्य शृंखला के संदर्भ में निम्नलिखित कथनों पर विचार कीजिये:

1. इसकी शुरुआत जीव की मृत्यु के साथ होती है।
2. यदि अपरद में नाइट्रोजन और शर्करा जैसे जल में विलेय पदार्थों की मात्रा प्रचुर हो तो अपघटन प्रक्रिया धीमी होती है।
3. स्थलीय पारिस्थितिकी तंत्र में ऊर्जा का बड़ा भाग चारण (चराई) खाद्य शृंखला की तुलना में अपरद खाद्य शृंखला के माध्यम से प्रवाहित होता है।

उपर्युक्त कथनों में से कौन-से सही हैं?

(a) केवल 1 और 2 *(b)* केवल 2 और 3
(c) केवल 1 और 3 *(d)* 1, 2 और 3

72. निम्नलिखित कथनों पर विचार कीजिये:

1. कुछ जीव अपने जीवनकाल में केवल एक ही बार प्रजनन करते हैं।
2. कुछ जीव अपने जीवनकाल के दौरान कई बार प्रजनन करते हैं।
3. कुछ जीव बड़ी संख्या में छोटे आकार की संतान को जन्म देते हैं।
4. कुछ जीव छोटी संख्या में बड़े आकार की संतान जन्म देते हैं।

उपर्युक्त में से कितने कथन सही हैं?

(a) केवल एक *(b)* केवल दो
(c) केवल तीन *(d)* सभी चार

73. निम्नलिखित में से कौन-सा विकास की प्रक्रिया का सबसे अच्छा प्रतिनिधित्व करता है जिसमें एक विशेष भौगोलिक क्षेत्र के भीतर कई प्रजातियाँ उत्पन्न और विकसित होती हैं, जो विभिन्न पारिस्थितिक क्षेत्रों पर अधिकार कर लेती हैं?

(a) भौगोलिक विशिष्टता
(b) अनुकूली विकिरण
(c) अपसारी विकास
(d) आनुवंशिक प्रवाह

74. निम्नलिखित कथनों पर विचार कीजिये:

1. भारतीय दंड संहिता उस तरीके को निर्धारित करती है जिसके अंतर्गत मृत्युदंड पाए व्यक्ति को फाँसी दी जाएगी।
2. भारतीय संविधान, राज्यपाल को राज्य विधि के अंतर्गत दिये गए मृत्युदंड को क्षमा करने की अनुमति प्रदान करता है।

उपर्युक्त कथनों में से कौन-सा/से सही है/हैं?

(a) केवल 1 *(b)* केवल 2
(c) 1 और 2 दोनों *(d)* न तो 1 और न ही 2

75. निम्नलिखित कथनों पर विचार कीजिये:

1. जब विधानसभा का सत्र चल रहा हो, तो राज्यपाल बहुमत परीक्षण का आह्वान कर सकता है।
2. राज्यपाल दल के सदस्यों के बीच आंतरिक मतभेदों के आधार पर बहुमत परीक्षण का आह्वान नहीं कर सकता है।

उपर्युक्त में से कौन-सा/से कथन सही है/हैं?

(a) केवल 1 *(b)* केवल 2
(c) 1 और 2 दोनों *(d)* न तो 1 और न ही 2

76. अनुच्छेद 142 के संदर्भ में निम्नलिखित कथनों पर विचार कीजिये:

1. यह सर्वोच्च न्यायालय को ऐसी डिक्री पारित करने या ऐसा आदेश देने की विवेकाधीन शक्ति प्रदान करता है जो पूर्ण न्याय करने के लिये आवश्यक है।
2. यह न्यायिक सक्रियता का मार्ग प्रशस्त करता है।
3. इसमें 'शक्तियों के पृथक्करण' के सिद्धांत का उल्लंघन करने की प्रवृत्ति है।

उपर्युक्त में से कितने कथन सही हैं?

(a) केवल एक *(b)* केवल दो
(c) सभी तीन *(d)* कोई भी नहीं

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70. Which of the following is the consequence of 'Eutrophication'?

(a) It is a process in which nutrient enriched water bodies support a dense plant population.

(b) It is a natural process of cleaning, occurring in undisturbed aquatic environments in which water is filtered through layers of soil and other natural materials.

(c) It is the excessive influx of oxygen into aquatic ecosystems, leading to oxygen-rich water bodies.

(d) It occurs primarily in pristine, untouched aquatic environments with no human activity or nutrient input.

71. With reference to detritus food chain, consider the following statements:

1. It begins with the death of organism.
2. The decomposition is slower if detritus is rich in nitrogen and water-soluble substances like sugars.
3. In terrestrial ecosystem larger fraction of energy flows through the detritus food chain than the grazing food chain.

Which of the statements given above are correct?

(a) 1 and 2 only *(b)* 2 and 3 only
(c) 1 and 3 only *(d)* 1, 2 and 3

72. Consider the following statements:

1. Some organisms breed only once in their lifetime.
2. Some organisms breed many times during their lifetime.
3. Some organisms produce a large number of small-sized offspring.
4. Some organisms produce a small number of large-sized offspring.

How many of the above statements are correct?

(a) Only one *(b)* Only two
(c) Only three *(d)* All four

73. Which of the following best describes the process of evolution in which different species originate and diversify within a specific geographical area, radiating to occupy various ecological niches?

(a) Geographic Speciation
(b) Adaptive Radiation
(c) Convergent Evolution
(d) Genetic Drift

74. Consider the following statements:

1. Indian Penal Code prescribes the manner in which person sentenced to death shall be hanged.
2. Indian constitution allows the Governor to pardon death sentences awarded under state law.

Which of the statements given above is/are correct?

(a) 1 only *(b)* 2 only
(c) Both 1 and 2 *(d)* Neither 1 nor 2

75. Consider the following statements:

1. When the legislative assembly is in session, the Governor can call for a floor test.
2. The Governor cannot call for a floor test on the basis of internal differences between the party members.

Which of the statements given above is/are correct?

(a) 1 only *(b)* 2 only
(c) Both 1 and 2 *(d)* Neither 1 nor 2

76. With reference to Article 142, consider the following statements:

1. It provides discretionary power to the Supreme Court to pass such decree or make such order as is necessary for doing complete justice.
2. It paves a way for Judicial activism.
3. It has tendencies to violate the doctrine of 'separation of powers.'

How many of the above statements are correct?

(a) Only one *(b)* Only two
(c) All three *(d)* None

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77. निम्नलिखित में से कौन सा निकाय अंतर्राष्ट्रीय बौद्धिक संपदा सूचकांक (IIPI) जारी करता है?

(a) संयुक्त राष्ट्र शैक्षिक, वैज्ञानिक और सांस्कृतिक संगठन (यूनेस्को)

(b) विश्व व्यापार संगठन (WTO)

(c) विश्व बौद्धिक संपदा संगठन (WIPO)

(d) यू.एस. चैंबर्स ऑफ कॉमर्स

78. आत्म-अभिशंसन (self-incrimination) के विरुद्ध सुरक्षा के संदर्भ में, निम्नलिखित कथनों पर विचार कीजिये:

1. संविधान के अनुसार, किसी अपराध के आरोपी व्यक्ति को स्वयं के खिलाफ गवाह बनने के लिये मज़बूर नहीं किया जा सकता है।
2. आत्म-अभिशंसन के विरुद्ध सुरक्षा मौखिक साक्ष्य और दस्तावेज़ी साक्ष्य दोनों तक विस्तृत है।
3. इसका विस्तार आपराधिक कार्यवाही और सिविल कार्यवाही दोनों तक है।

उपर्युक्त में से कितने कथन सही हैं?

(a) केवल एक *(b)* केवल दो

(c) सभी तीन *(d)* कोई भी नहीं

79. भारतीय विधिज्ञ परिषद (BCI) के संदर्भ में, निम्नलिखित कथनों पर विचार कीजिये:

1. यह अधिवक्ता अधिनियम, 1961 के तहत संसद द्वारा बनाई गई एक सांविधिक संस्था है।
2. यह एक स्वतंत्र निकाय है जो किसी सरकारी प्राधिकरण को रिपोर्ट नहीं करता है।
3. इसके पास देश में दांडिक विधि का निर्माण और कार्यान्वयन करने का अधिकार है।

उपर्युक्त में से कितने कथन सही हैं?

(a) केवल एक *(b)* केवल दो

(c) सभी तीन *(d)* कोई भी नहीं

80. ट्रेंड्स इन इंटरनेशनल आर्म्स ट्रांसफर रिपोर्ट 2022 के संदर्भ में, निम्नलिखित कथनों पर विचार कीजिये:

1. भारत वर्ष 2018-22 तक सऊदी अरब के बाद विश्व का दूसरा सबसे बड़ा हथियारों का आयातक था।
2. रूस वर्ष 2018-22 के बीच की अवधि में भारत का सबसे बड़ा हथियार आपूर्तिकर्त्ता था।
3. यह रिपोर्ट स्टॉकहोम इंटरनेशनल पीस रिसर्च इंस्टीट्यूट (SIPRI) द्वारा जारी की गई है।

उपर्युक्त में से कितने कथन सही हैं?

(a) केवल एक *(b)* केवल दो

(c) सभी तीन *(d)* कोई भी नहीं

81. विदेशी अंशदान विनियमन अधिनियम (FCRA), 2010 के संदर्भ में निम्नलिखित कथनों पर विचार कीजिये:

1. यह अधिनियम विदेश मंत्रालय द्वारा कार्यान्वित किया जाता है।
2. इसमें विदेशी दान प्राप्त करने के इच्छुक प्रत्येक व्यक्ति या गैर सरकारी संगठन (NGO) को अधिनियम के तहत पंजीकृत होना आवश्यक है।
3. यह अधिनियम चुनाव के प्रत्याशियों, पत्रकारों, या समाचार पत्र और मीडिया प्रसारण कंपनियों द्वारा विदेशी निधि प्राप्त करने पर प्रतिबंध लगाता है।

उपर्युक्त में से कितने कथन सही हैं?

(a) केवल एक *(b)* केवल दो

(c) सभी तीन *(d)* कोई भी नहीं

82. नवप्रवर्तन, एकीकरण और सतत् शहरी निवेश CITIIS कार्यक्रम के संदर्भ में निम्नलिखित कथनों पर विचार कीजिये:

1. CITIIS कार्यक्रम भारत सरकार के स्मार्ट सिटी मिशन का एक उप-घटक है।
2. यह आवासन और शहरी कार्य मंत्रालय, एजेंसी फ्रैन्काइज़ डी डेवलपमेंट (AFD), यूरोपीय संघ (EU) और राष्ट्रीय शहरी कार्य संस्थान (NIUA) का एक संयुक्त कार्यक्रम है।

उपर्युक्त में से कौन-सा/से कथन सही है/हैं?

(a) केवल 1 *(b)* केवल 2

(c) 1 और 2 दोनों *(d)* न तो 1 और न ही 2

83. द फ्यूचर ऑफ जॉब्स रिपोर्ट जारी किया जाता है

(a) अंतर्राष्ट्रीय मुद्रा कोष द्वारा

(b) इकोनॉमिक इंटेलिजेंस यूनिट द्वारा

(c) विश्व आर्थिक मंच द्वारा

(d) विश्व बैंक द्वारा

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77. Which of the following bodies releases the International Intellectual Property Index (IIPI)?

(a) United Nations Educational, Scientific and Cultural Organization (UNESCO)
(b) World Trade Organization (WTO)
(c) World Intellectual Property Organization (WIPO)
(d) U.S. Chambers of Commerce

78. With reference to protection against self-incrimination, consider the following statements:

1. As per the constitution, a person accused of a crime cannot be compelled to be a witness against himself.
2. The protection against self-incrimination extends to both oral evidence and documentary evidence.
3. It extends to both criminal proceedings and civil proceedings.

How many of the above statements are correct?

(a) Only one *(b)* Only two
(c) All three *(d)* None

79. With reference to Bar Council of India, consider the following statements:

1. It is a statutory body created by Parliament under the Advocates Act, 1961.
2. It is an independent body that does not report to any government authority.
3. It has the authority to enact and enforce criminal laws in the country.

How many of the above statements are correct?

(a) Only one *(b)* Only two
(c) All three *(d)* None

80. With reference to Trends in International Arms Transfers report 2022, consider the following statements:

1. India was the world's 2nd largest importer of major arms from 2018–22 after Saudi Arabia.
2. Russia was India's largest arms supplier in the periods between 2018-22.
3. The report is released by Stockholm International Peace Research Institute's (SIPRI).

How many of the above statements are correct?

(a) Only one *(b)* Only two
(c) All three *(d)* None

81. Consider the following statements with reference to Foreign Contribution Regulation Act (FCRA), 2010:

1. The Act is implemented by the Ministry of External Affairs.
2. It requires every person or NGO wishing to receive foreign donations to be registered under the Act.
3. The Act prohibits the receipt of foreign funds by candidates for elections, journalists, or newspaper and media broadcast companies.

How many of the above statements are correct?

(a) Only one *(b)* Only two
(c) All three *(d)* None

82. Consider the following statements with reference to City Investment to Innovate, Integrate and Sustain CITIIS programme:

1. CITIIS is a sub-component of the Government of India's Smart Cities Mission.
2. It is a joint program of the Ministry of Housing and Urban Affairs, Agence Francaise de Development (AFD), the European Union (EU), and the National Institute of Urban Affairs (NIUA).

Which of the statements given above is/are correct?

(a) 1 only *(b)* 2 only
(c) Both 1 and 2 *(d)* Neither 1 nor 2

83. The Future of Job report is released by

(a) International Monetary Fund
(b) Economic Intelligence Unit
(c) World Economic Forum
(d) World bank

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84. किस स्थिति में एक गैर-सूचीबद्ध कंपनी पर एंजेल टैक्स लगाया जा सकता है?

(a) जब वे उचित बाज़ार मूल्य से कम मूल्य पर शेयर निर्गमित करते हैं।

(b) जब वे उचित बाज़ार मूल्य से अधिक मूल्य पर शेयर निर्गमित करते हैं, जो उनके ब्रांड मूल्य और बाज़ार की अपेक्षाओं को दर्शाता है।

(c) जब वे बाज़ार की स्थितियों की चिंता किये बिना सममूल्य पर शेयर निर्गमित करते हैं।

(d) जब वे अपने परिचालन प्रदर्शन के बावजूद, उचित बाज़ार मूल्य के बराबर मूल्य पर शेयर निर्गमित करते हैं।

85. भारत के वस्त्र क्षेत्र के संदर्भ में निम्नलिखित कथनों पर विचार कीजिये:

1. यह क्षेत्र कृषि के बाद भारत में रोज़गार का दूसरा सबसे बड़ा प्रदाता है।
2. टेक्सटाइल पार्क विकसित करने के लिये PM MITRA योजना प्रारंभ की गई है।
3. बांग्लादेश, श्रीलंका और अफ्रीकी देशों को शुल्क-मुक्त पहुँच प्राप्त होती है और भारत के वस्त्र अंतर्राष्ट्रीय परिदृश्य में तुलनात्मक रूप से कम प्रतिस्पर्द्धी हो जाते हैं।

उपर्युक्त में से कितने कथन सही हैं?

(a) केवल एक *(b)* केवल दो
(c) सभी तीन *(d)* कोई भी नहीं

86. सोशल स्टॉक एक्सचेंज (SSE) के संदर्भ में निम्नलिखित कथनों पर विचार कीजिये:

1. इसका गठन वित्त मंत्रालय के अंतर्गत एक स्वतंत्र स्टॉक एक्सचेंज के रूप में किया गया है।
2. यह सामाजिक कल्याण उद्देश्य की प्राप्ति के लिये काम करने वाले सामाजिक उद्यमों को सूचीबद्ध करने का मंच है।

उपर्युक्त में से कौन-सा/से कथन सही है/हैं?

(a) केवल 1 *(b)* केवल 2
(c) 1 और 2 दोनों *(d)* न तो 1 और न ही 2

87. निम्नलिखित कथनों पर विचार कीजिये:

1. किलाऊआ ज्वालामुखी हवाई द्वीप पर स्थित सक्रिय ज्वालामुखी है।
2. हवाई मध्य प्रशांत महासागर में द्वीपों का एक समूह है।

उपर्युक्त कथनों में से कौन-सा/से सही है/हैं?

(a) केवल 1
(b) केवल 2
(c) 1 और 2 दोनों
(d) न तो 1 और न ही 2

88. निम्नलिखित कथनों पर विचार कीजिये:

1. ऊर्जा संरक्षण अधिनियम, 2001 के अंतर्गत मानकीकरण और चिह्नांकन कार्यक्रम प्रारंभ किया गया था।
2. छत के पंखे ऊर्जा दक्षता ब्यूरो (BEE) की अनिवार्य तारकीय चिह्नांकन के दायरे में आ गए हैं।

उपर्युक्त कथनों में से कौन-सा/से सही है/हैं?

(a) केवल 1
(b) केवल 2
(c) 1 और 2 दोनों
(d) न तो 1 और न ही 2

89. नीलकुरिंजी के संदर्भ में निम्नलिखित में से कौन-सा कथन सही है?

(a) यह एक झाड़ी है जो दक्षिण भारत के पश्चिमी घाट के शोला वनों में उगती है।

(b) नीलकुरिंजी के फूल प्रत्येक 8 वर्ष में एक बार खिलते हैं।

(c) नागरहोल राष्ट्रीय उद्यान कुरिंजी के व्यापक रूप से खिलने के लिये जाना जाता है।

(d) पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय (MoEF&CC) ने नीलकुरिंजी को वन्यजीव (संरक्षण) अधिनियम, 1972 की अनुसूची II के तहत सूचीबद्ध किया है।

90. अंतर्राष्ट्रीय समुद्रतल अधिकरण के संदर्भ में निम्नलिखित कथनों पर विचार कीजिये:

1. इसकी स्थापना समुद्री कानून पर संयुक्त राष्ट्र अभिसमय के अंतर्गत की गई थी।
2. इसका मुख्यालय पेरिस में स्थित है।

उपर्युक्त कथनों में से कौन-सा/से सही है/हैं?

(a) केवल 1
(b) केवल 2
(c) 1 और 2 दोनों
(d) न तो 1 और न ही 2

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84. In which situation can an unlisted company be subject to angel tax?

(a) When they issue shares at a price below the fair market value.

(b) When they issue shares at a price above the fair market value, reflecting their brand value and market expectations.

(c) When they issue shares at par value regardless of market conditions.

(d) When they issue shares at a price equal to the fair market value, irrespective of their operational performance.

85. Consider the following statements with reference to textile sector of India:

1. The sector is the 2nd largest provider of employment in India, after agriculture.
2. PM MITRA scheme is launched to develop textile parks.
3. Countries like Bangladesh, Sri Lanka and African countries get duty-free access and make India's textiles comparatively less competitive in the international landscape.

How many of the above statements are correct?

(a) Only one *(b)* Only two

(c) All three *(d)* None

86. Consider the following statements with reference to Social Stock Exchange (SSE):

1. It is formed as an independent stock exchange under the Ministry of Finance.
2. It is platform for listing social enterprises working for the realization of a social welfare objective.

Which of the statements given above is/are correct?

(a) 1 only *(b)* 2 only

(c) Both 1 and 2 *(d)* Neither 1 nor 2

87. Consider the following statements:

1. Kilauea volcano is active volcano located on the Hawaiian Island.
2. Hawaii is a group of islands in the Central Pacific Ocean.

Which of the statements given above is/are correct?

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

88. Consider the following statements:

1. Standards and Labelling Program was launched under Energy Conservation Act, 2001.
2. Ceiling fans have come under the ambit of mandatory star labelling of Bureau of Energy Efficiency (BEE).

Which of the statements given above is/are correct?

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

89. With reference to Neelakurinji, which one of the following statements is correct?

(a) It is a shrub that grows in the shola forests of Western Ghats in South India.

(b) Neelakurinji flowers bloom once every 8 years.

(c) Nagarhole National Park is known for widespread blooming of kurinji.

(d) Ministry of Environment, Forest and Climate Change (MoEF&CC) has listed Neelakurinji under Schedule II of Wildlife (Protection) Act, 1972.

90. With reference to International Seabed Authority, consider the following statements:

1. It was established under United Nations Convention on the Law of the Sea.
2. It has its headquarters in Paris.

Which of the statements given above is/are correct?

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

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91. शासन व्यवस्था के संदर्भ में, निम्नलिखित युग्मों पर विचार कीजिये:

मोबाइल एप्लीकेशन		*विमोचनकर्त्ता*
1. ऐशट्रैक	:	ऊर्जा मंत्रालय
2. मदद	:	वित्त मत्रांलय
3. अतिथि	:	विदेश मंत्रालय

उपर्युक्त युग्मों कितने सही सुमेलित हैं?

(a) केवल एक युग्म

(b) केवल दो युग्म

(c) सभी तीन युग्म

(d) कोई भी युग्म नहीं

92. डार्क स्काई रिज़र्व के संदर्भ में निम्नलिखित कथनों पर विचार कीजिये:

1. लद्दाख में हानले भारत का पहला डार्क स्काई रिज़र्व है।
2. डार्क स्काई स्थान प्रकाश प्रदूषण पर निर्भर करता है जिसे आर्द्रतामापी पैमाने पर मापा जाता है।
3. यह तारों भरी रातों की असाधारण अथवा विशिष्ट गुणवत्ता वाली सार्वजनिक या निजी भूमि को दिया गया एक पदनाम है।

उपर्युक्त कथनों में से कौन-सा/से सही है/हैं?

(a) केवल 1 और 2

(b) केवल 2

(c) केवल 1 और 3

(d) केवल 3

93. 'ग्रेटर स्कूप' (Greater Scaup) की चर्चा कभी-कभी निम्नलिखित में से किसके संदर्भ में की जाती है?

(a) लोकताक झील में देखी गई बत्तखों की दुर्लभ प्रजाति।

(b) अंटार्कटिका में देखी गई पेंगुइन की प्रजाति।

(c) पश्चिमी घाट में पाए गए साँप की दुर्लभ प्रजाति।

(d) इंडोनेशिया में स्थित शील्ड ज्वालामुखी।

94. जल, पर्यावरण एवं स्वास्थ्य पर संयुक्त राष्ट्र विश्वविद्यालय संस्थान (UNU-INWEH) के संदर्भ में निम्नलिखित कथनों पर विचार कीजिये:

1. यह संयुक्त राष्ट्र की एक अकादमिक शाखा है।
2. यह पूर्णत: जल के मुद्दों पर केंद्रित है।

उपर्युक्त कथनों में से कौन-सा/से सही है/हैं?

(a) केवल 1

(b) केवल 2

(c) 1 और 2 दोनों

(d) न तो 1 और न ही 2

95. एशियाई जलपक्षी गणना (AWC) के संदर्भ में निम्नलिखित कथनों पर विचार कीजिये:

1. यह वेटलैंड इंटरनेशनल (WI) द्वारा समन्वित ग्लोबल इंटरनेशनल वॉटरबर्ड सेंसस (IWC) का एक हिस्सा है।
2. भारत में, इसे बॉम्बे नेचुरल हिस्ट्री सोसाइटी (BNHS) और संयुक्त राष्ट्र (UN) द्वारा संयुक्त रूप से समन्वित किया जाता है।

उपर्युक्त कथनों में से कौन-सा/से सही है/हैं?

(a) केवल 1

(b) केवल 2

(c) 1 और 2 दोनों

(d) न तो 1 और न ही 2

96. मैंग्रोव पारिस्थितिकी तंत्र में सतत् जलकृषि (SAIME) के संदर्भ में निम्नलिखित कथनों पर विचार कीजिये:

1. यह गुजरात में एक समुदाय-आधारित प्रयोगात्मक परियोजना है जिसके अंतर्गत किसान झींगा कृषि के लिये तालाबों के आसपास मैंग्रोव का वृक्षारोपण करना है।
2. इसकी कल्पना नेचर एनवायरनमेंट एंड वाइल्डलाइफ सोसाइटी (NEWS) और ग्लोबल नेचर फंड द्वारा की गई है।

उपर्युक्त कथनों में से कौन-सा/से सही है/हैं?

(a) केवल 1

(b) केवल 2

(c) 1 और 2 दोनों

(d) न तो 1 और न ही 2

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91. With reference to governance, consider the following pairs:

Application		*Launched by*
1. ASHTRACK	:	Ministry of Power
2. MADAD	:	Ministry of Finance
3. Athithi	:	Ministry of External Affair

How many pairs given above are correctly matched?

(a) Only one pair
(b) Only two pairs
(c) All three pairs
(d) None of the pairs

92. With reference to Dark Sky Reserve, consider the following statements:

1. Hanle in Ladakh is India's first Dark Sky Reserve.
2. Dark Sky location depends on light pollution which is measured on the Hygrometer Scale.
3. It is a designation given to public or private land with exceptional or distinguished quality of starry nights.

Which of the statements given above is/are correct?

(a) 1 and 2 only
(b) 2 only
(c) 1 and 3 only
(d) 3 only

93. 'Greater Scaup' is sometimes talked about with reference to which one of the following?

(a) Rare species of duck sighted in Loktak lake.
(b) Species of penguin sighted in Antarctica.
(c) Rare species of snake found in Western Ghats.
(d) Shield volcano situated in Indonesia.

94. With reference to United Nations University Institute on Water, Environment and Health (UNU-INWEH), consider the following statements:

1. It is an academic arm of the United Nations.
2. It focuses entirely and solely on water issues.

Which of the statements given above is/are correct?

(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

95. With reference to Asian Waterbird Census (AWC), consider the following statements:

1. It is a part of global International Waterbird Census (IWC) coordinated by Wetland International (WI).
2. In India, it is jointly coordinated by Bombay Natural History Society (BNHS) and United Nations (UN).

Which of the statements given above is/are correct?

(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

96. With reference to Sustainable Aquaculture In Mangrove Ecosystem (SAIME), consider the following statements:

1. It is a community-based pilot project in Gujarat under which farmers are planting mangrove trees around shrimp ponds.
2. It is being conceived by Nature Environment and Wildlife Society (NEWS) and Global Nature Fund.

Which of the statements given above is/are correct?

(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

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97. हिमालय सीमा के निकट भूमि धंसाव का पर्यवेक्षण करने हेतु निम्नलिखित में से किस समिति का गठन किया गया था?

(a) जे.सी. पंत समिति

(b) महेश चंद्र मिश्र समिति

(c) के.सी. अग्रवाल समिति

(d) होता समिति

98. अंतर्राष्ट्रीय नागरिक उड्डयन संगठन (ICAO) के संदर्भ में निम्नलिखित कथनों पर विचार कीजिये:

1. इसकी स्थापना वर्ष 1947 में अंतर्राष्ट्रीय नागरिक उड्डयन संबंधी अभिसमय के तहत की गई थी।
2. इसका लक्ष्य वैश्विक नागरिक उड्डयन प्रणाली का सतत् विकास प्राप्त करना है।

उपर्युक्त कथनों में से कौन-सा/से सही है/हैं?

(a) केवल 1

(b) केवल 2

(c) 1 और 2 दोनों

(d) न तो 1 और न ही 2

99. बाओबाब वृक्षों के संबंध में निम्नलिखित कथनों पर विचार कीजिये:

1. यह दक्षिण अमेरिका की स्थानिक प्रजाति है।
2. यह अपनी असाधारण दीर्घायु तथा बैरल जैसे तने के लिये जाने जाते हैं।

उपर्युक्त कथनों में से कौन-सा/से सही है/हैं?

(a) केवल 1 *(b)* केवल 2

(c) 1 और 2 दोनों *(d)* न तो 1 और न ही 2

100. नदी-शहर गठबंधन (RCA) के संदर्भ में, निम्नलिखित कथनों पर विचार कीजिये:

1. यह शहरी नदियों के सतत् प्रबंधन हेतु नदियों के किनारे बसे शहरों के लिये एक समर्पित मंच है।
2. इसका एक अंतर्राष्ट्रीय सदस्य शहर डेनमार्क से है।
3. यह जल शक्ति मंत्रालय और गृह मंत्रालय की एक संयुक्त पहल है।

उपर्युक्त में से कितने कथन सही हैं?

(a) केवल एक *(b)* केवल दो

(c) सभी तीन *(d)* कोई भी नहीं

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97. Which of the following committees was formed in context of reconnaissance of the land subsidence near the Himalayan border?

(a) J.C. Pant committee

(b) Mahesh Chandra Mishra committee

(c) K.C. Aggarwal committee

(d) Hota committee

98. With reference to International Civil Aviation Organization (ICAO), consider the following statements:

1. It was established in 1947 under the Convention on International Civil Aviation.
2. Its vision is to achieve sustainable growth of the global civil aviation system.

Which of the statements given above is/are correct?

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

99. Consider the following statements about Baobab trees:

1. They are native to South America.
2. They are known for their extraordinary longevity and have barrel-like trunks.

Which of the statements given above is/are correct?

(a) 1 only *(b)* 2 only

(c) Both 1 and 2 *(d)* Neither 1 nor 2

100. With reference to River-Cities Alliance (RCA), consider the following statements:

1. It is a dedicated platform for river cities for sustainable management of urban rivers.
2. It has one international member city from Denmark.
3. It is a joint initiative of Ministry of Jal Shakti & Ministry of Home Affairs.

How many of the above statements are correct?

(a) Only one *(b)* Only two

(c) All three *(d)* None

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TEST BOOKLET SERIES

Test Code: P1/P2-2406

TEST BOOKLET
GENERAL STUDIES

TEST – 06

B

Time Allowed : Two Hours **Maximum Marks : 200**

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1. IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS TEST BOOKLET *DOES NOT* HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS, ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET.
2. ENCODE CLEARLY THE TEST BOOKLET SERIES CODE **A, B, C** OR **D** AS THE CASE MAY BE IN THE APPROPRIATE PLACE IN THE ANSWER SHEET.
3. You have to enter your Roll Number on the Test Booklet in the Box provided alongside this line. *DO NOT* write *anything else* on the Test Booklet.
4. This Test Booklet contains 100 items (questions). Each question is printed both in **Hindi** and **English**. Each item comprises four responses (answers). You will select the response which you want to mark on the Answer Sheet. In case you feel that there is more than one correct response, mark the response which you consider the best. In any case, choose ONLY ONE response for each item.
5. You have to mark all your responses ONLY on the separate Answer Sheet provided. See directions in the Answer sheet.
6. All items carry equal marks.
7. Before you proceed to mark in the Answer Sheet the response to various items in the Test Booklet, you have to fill in some particulars in the Answer Sheet as per instructions sent to you with your admission certificate.
8. After you have completed filling in all your responses on the Answer Sheet and examination has concluded, you should hand over to the Invigilator *only the Answer Sheet*. You are permitted to take away with you the Test Booklet.
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10. **Penalty for wrong answers:**
    THERE WILL BE PENALTY FOR WRONG ANSWERS MARKED BY A CANDIDATE IN THE OBJECTIVE TYPE QUESTION PAPERS.
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    (ii) If a candidate gives more than one answer, it will be treated as a **wrong answer** even if one of the given answers happens to be correct and there will be same penalty as above to that question.
    (iii) If a question is left blank, i.e., no answer is given by the candidate, there will be no **penalty** for that question.

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CIVIL SERVICES (PRELIMINARY) TEST SERIES – 2024

TEST BOOKLET SERIES

Test Code: P1/P2-2406

(English Version)

ANSWER & EXPLANATION

GENERAL STUDIES

TEST – 06

B

ANSWERS

Q. No.	Answers	Q. No.	Answers	Q. No.	Answers	Q. No.	Answers
1	(b)	26	(a)	51	(a)	76	(c)
2	(c)	27	(b)	52	(c)	77	(d)
3	(b)	28	(d)	53	(b)	78	(b)
4	(b)	29	(a)	54	(d)	79	(a)
5	(a)	30	(c)	55	(d)	80	(b)
6	(d)	31	(c)	56	(b)	81	(b)
7	(b)	32	(c)	57	(d)	82	(c)
8	(b)	33	(c)	58	(a)	83	(c)
9	(a)	34	(c)	59	(c)	84	(b)
10	(c)	35	(b)	60	(b)	85	(c)
11	(b)	36	(b)	61	(c)	86	(b)
12	(c)	37	(a)	62	(c)	87	(c)
13	(c)	38	(c)	63	(b)	88	(c)
14	(c)	39	(a)	64	(c)	89	(a)
15	(b)	40	(b)	65	(b)	90	(a)
16	(a)	41	(a)	66	(c)	91	(a)
17	(b)	42	(b)	67	(c)	92	(c)
18	(a)	43	(c)	68	(c)	93	(a)
19	(a)	44	(a)	69	(d)	94	(c)
20	(b)	45	(c)	70	(a)	95	(a)
21	(a)	46	(c)	71	(c)	96	(b)
22	(b)	47	(d)	72	(d)	97	(b)
23	(c)	48	(d)	73	(b)	98	(c)
24	(b)	49	(a)	74	(d)	99	(b)
25	(d)	50	(b)	75	(b)	100	(b)

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1. (b)

Explanation:

- The process of protecting an endangered plant or animal species can be categorised into two primary categories: *in-situ* and *ex-situ.*
- **Ex situ conservation** is the conservation and maintenance of samples of living organisms outside their natural habitat. Maintenance of Gene Banks, **Zoological parks, Botanical gardens,** Seed Banks etc. comes under this method of conservation.
- There are many animals that have become extinct in the wild but continue to be maintained in zoological parks.
- **In situ** conservation is conservation of species in their natural habitats. Maintenance of natural habitats in the form of wildlife sanctuaries, **sacred groves, national parks, community reserves** etc. comes under this method of conservation. **Hence, option (b) is correct.**

2. (c)

Explanation:

- A constant input of solar energy is the basic requirement for any ecosystem to function and sustain. **Primary production** is defined as the amount of rationalised biomass or organic matter **produced per unit area over a time period by plants** during photosynthesis.
- It is **expressed in terms of weight or energy.** The rate of biomass production is called productivity. It can be divided into gross primary productivity (GPP) and net primary productivity (NPP).
- **Gross primary productivity** of an ecosystem is the **rate of production of organic matter during photosynthesis.** A considerable amount of GPP is utilised by plants in respiration. Gross primary productivity minus respiration losses (R), is the net primary productivity (NPP). GPP – R = NPP. **Hence, statement (1) is correct.**
- **Net primary productivity** is the available biomass for the consumption to heterotrophs (herbivores and decomposers).
- **Secondary productivity is defined as the rate of formation of new organic matter by consumers. Primary productivity depends on the plant species inhabiting a particular area.** It also depends on a variety of environmental factors. **Hence, statement (2) is correct.**

3. (b)

Explanation:

- Frankenrocks, **are rocks or coral formations that have been affected by melted plastic,** typically due to the burning of plastic trash in coastal areas.
- This phenomenon is a **result of plastic pollution and poses environmental risks** as it can break down into microplastics and release toxic chemicals, which can harm marine life and ecosystems.
- Scientists are finding more evidence of a new, insidious form of plastic pollution, melted plastic that has melded with rocks, coral and other naturally occurring material in coastal areas.
- Samples of these "Frankenrocks" collected from a single beach on a single island in Indonesia were likely formed by the burning of plastic trash.
- They pose a danger to marine life because they can break down into microplastics that then enter the food chain and can also leak toxic chemicals into the environment.

Hence, option (b) is correct.

4. (b)

Explanation:

- In most ecosystems, all the **pyramids, of number, of energy and biomass are upright,** i.e., producers are more in number and biomass than the herbivores, and herbivores are more in number and biomass than the carnivores. Also, **energy at a lower trophic level is always more than at a higher level. Hence, statement (1) is correct.**
- The pyramid of **biomass in sea is generally inverted** because the biomass of fishes far exceeds that of phytoplankton. **Hence, statement (2) is NOT correct.**
- **Pyramid of energy is always upright,** because when energy flows from a particular trophic level to the next trophic level, some energy is always lost as heat at each step.
- Each bar in the energy pyramid indicates the amount of energy present at each trophic level in a given time or annually per unit area. **Hence, statement (3) is correct.**

5. (a)

Explanation:

- **Interspecific interactions** arise from the interaction of populations of two different species. **They could be beneficial, detrimental or neutral** (neither harm nor benefit) to one of the species or both.

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- **Both the species benefit in mutualism,** and **both lose in competition in their interactions with each other.** In both parasitism and predation only one species benefits (parasite and predator, respectively) and the interaction is detrimental to the other species (host and prey, respectively). **Hence, pair (1) is correctly matched and pair (2) is NOT correctly matched.**
- The interaction where **one species is benefitted and the other is neither benefitted nor harmed is called commensalism. Hence, pair (3) is NOT correctly matched.**
- In amensalism on the other hand one species is harmed whereas the other is unaffected. **Predation, parasitism and commensalism** share a common characteristic– the **interacting species live closely together.**

Species A	Species B	Name of Interaction
+	+	Mutualism
–	–	Competition
+	–	Predation
+	–	Parasitism
+	0	Commensalism
–	0	Amensalism

6. (d)

Explanation:

- **Plants, bacteria, fungi and animals whose genes have been altered by manipulation are called Genetically Modified Organisms (GMO).**
- GM plants have been useful in many ways. Genetic modification has:
  - Made crops more tolerant to abiotic stresses (cold, drought, salt, heat).
  - Reduced reliance on chemical pesticides (pest-resistant crops).
  - Helped to reduce post-harvest losses.
  - Increased efficiency of mineral usage by plants (this prevents early exhaustion of fertility of soil).
  - Enhanced nutritional value of food, e.g., golden rice, i.e., Vitamin 'A' enriched rice. **Hence, option (d) is correct.**
- In addition to these uses, **GM has been used to create tailor-made plants** to supply alternative resources to industries, in the form of starches, fuels and pharmaceuticals.
- **Bt Toxin is produced by a bacterium called Bacillus thuringiensis (Bt for short).** Bt toxin gene has been cloned from the bacteria and been expressed in plants to provide resistance to insects without the need for insecticides; in effect created a bio-pesticide.
- **Examples are: Bt cotton, Bt corn, rice, tomato, potato and soyabean etc.**

7. (b)

Explanation:

- **The Genetic Engineering Appraisal Committee (GEAC)** functions in the **Ministry of Environment, Forest and Climate Change** (MoEF&CC). **Hence, statement (1) is correct.**
- It is responsible for appraisal of activities involving large scale use of hazardous microorganisms and recombinants in research and industrial production from the environmental angle.
- The committee is also responsible for appraisal of proposals relating to release of Genetically Engineered (GE) organisms and products into the environment including experimental field trials. **Hence, statement (3) is correct.**
- GEAC is **chaired by the Special Secretary/Additional Secretary of MoEF&CC and co-chaired by a representative from the Department of Biotechnology (DBT).** Presently, it has 24 members and meets every month to review the applications in the areas indicated above. **Hence, statement (2) is NOT correct.**

8. (b)

Explanation:

- **Biopiracy** is a term used to describe the **unethical and often illegal practice of multinational companies** and other organizations **exploiting biological resources without obtaining proper authorization** from the countries and communities where these resources are found.
- This exploitation typically occurs without compensating the local communities or countries for the use of their resources.
- It raises ethical and legal concerns about the fair and equitable sharing of benefits derived from biodiversity and traditional knowledge. **Hence, option (b) is correct.**
- **Bioprospecting** is defined as a systematic and **organized search for useful products** derived from bioresources including plants, microorganisms, animals, etc., that can be developed further for commercialization and overall benefits of the society.

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9. (a)

Explanation:

- Bioremediation is an environmental friendly and **sustainable technique** for the **cleanup** of polluted environments, such as **soil, water,** and **air,** using living organisms, primarily microorganisms, to degrade or remove various pollutants. **Hence, statement (3) is correct.**
- Microorganisms like **bacteria, fungi,** and **algae** are the key players in bioremediation. **Hence, statement (2) is NOT correct.**
- They can effectively target a wide range of pollutants, including **organic compounds** like hydrocarbons, solvents, and pesticides, as well as **certain heavy metals. Hence, statement (4) is NOT correct.**
- These organisms can thrive in diverse environmental conditions, making bioremediation applicable to various settings, from oil spills to industrial waste sites.
- This process harnesses the **natural metabolic capabilities** of these organisms to break down contaminants into less harmful substances or convert them into non-toxic forms. It is not a physical method but a **biological** one, involving the use of microorganisms to clean up contaminated sites. **Hence, statement (1) is NOT correct.**
- One of the main advantages of bioremediation is its eco-friendly nature, as it reduces the need for harsh chemicals and mechanical processes.
- It is often cost-effective and can be tailored to specific contaminants and environmental conditions. Bioremediation plays a crucial role in sustainable environmental management, helping to restore ecosystems and mitigate the impact of pollution.

10. (c)

Explanation:

- **Pyrolysis** is a **thermochemical process** that involves the decomposition of organic materials, such as biomass, plastics, and various waste products, at **elevated temperatures** in the **absence of oxygen** or with **limited oxygen supply. Hence, option (c) is correct.**
- This process results in the **breakdown of these materials into valuable products like biochar, bio-oil, and syngas,** while minimizing the generation of pollutants like greenhouse gases.
- During pyrolysis, as the temperature increases, the organic matter undergoes a series of **complex chemical reactions.**
- **These reactions break down the long-chain molecules present in the feedstock into simpler compounds.** The specific products and their composition depend on factors such as the **temperature, feedstock type,** and **process conditions.**
- **Biochar:** This is a solid **carbon-rich** material similar to charcoal, which can be used as a soil conditioner to improve soil fertility and carbon sequestration, aiding in climate change mitigation.
- **Bio-oil:** Also known as pyrolysis oil or **bio-crude,** this is a liquid product that can be further processed into biofuels or used as a precursor in chemical production.
- **Syngas:** This is a **mixture of hydrogen** and **carbon monoxide,** which can be used for generating heat, electricity, or as a feedstock in various industrial processes.
- It helps reduce the volume of waste going to landfills, mitigates greenhouse gas emissions, and produces valuable products.
- This technology has applications in **waste management, bioenergy production,** and **sustainable agriculture,** making it an important approach in the transition towards a more sustainable and circular economy.

11. (b)

Explanation:

- The **High Seas Treaty is a legally binding international agreement** being developed within the framework of the United Nations Convention on the Law of the Sea (UNCLOS). **Hence, statement (2) is correct.**
- High seas is the **area beyond** a country's **Exclusive Economic Zone (that extends up to 200 nautical miles [370 km] from the coastline)** and till where a nation has jurisdiction over living and non-living resources. **Hence, statement (1) is NOT correct.**
- **The high seas account for more than 60% of the world's ocean area** and cover about half of the Earth's surface, which makes them a hub of marine life.
- They regulate the climate by playing a fundamental role in planetary stability by mitigating the effects of climate change through its absorption of carbon and by storing solar radiation and distributing heat around the globe.

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- In 1982, the United Nations Convention on the Law of the Sea (UNCLOS), was adopted, which delineated rules to govern the oceans and the use of its resources. However, there was no comprehensive legal framework that covered the high seas.

12. (c)

Explanation:

- **ISRO** and New Space India Limited **(NSIL)** successfully launched the **One Web India-2 mission,** a significant achievement in space connectivity.
- The mission's primary objective was to deploy **36 satellites** into a 450 km circular orbit with an inclination of 87.4 degrees, which was accomplished using the **LVM3 rocket. Hence, statement (1) is correct.**
- One Web's mission is to provide **connectivity** for **everyone, everywhere,** through a **global communication network** powered **from space.**
- The company aims to bridge the digital divide by providing affordable, reliable, and high-speed internet access to remote and underserved regions.
- One Web Constellation operates in a **LEO Polar Orbit.** Satellites are arranged in 12 rings (Orbital planes) with 49 satellites in each plane. **Hence, statement (2) is correct.**
- The orbital planes are inclined to be near polar (87.9 Deg.).
- The orbital planes are **1200 km** above the Earth. Each satellite completes a full trip around the earth every 109 minutes.
- One Web already has connectivity solutions active today in key geographies across the globe and is bringing new areas online.
- One Web's **high-speed, low latency** solutions will help connect communities, enterprises, and governments around the world, demonstrating the unparalleled potential of LEO connectivity. **Hence, statement (3) is correct.**

13. (c)

Explanation:

International Women's Day:

- It is celebrated annually on **8th March.** It includes Celebration of women's achievements, raising awareness about women's equality, lobbying for accelerated gender parity, fundraising for female-focused charities, etc. **Hence, statement (I) is correct.**
- In 1910 a second **International Conference of Working Women** was held in Copenhagen. A woman named **Clara Zetkin** (Leader of the 'Women's Office' for the Social Democratic Party in Germany) tabled the idea of an International Women's Day.
- She proposed that every year in every country there should be a celebration on the same day - a Women's Day - to press for their demands.
- Following the decision agreed at Copenhagen in Denmark in **1911, International Women's Day was honoured the first time** in Austria, Denmark, Germany and Switzerland on **19 March. Hence, statement (II) is NOT correct.**
- The roots of the celebration had been in the labour movement across Europe and North America.
- However, it was only **in 1913** that the celebrations were shifted to **8th March,** and it has remained that way ever since.
- International Women's Day was celebrated **for the first time by the United Nations in 1975.**
- **Theme:** The theme for International Women's Day, **2023**, according to the United Nations is **"DigitALL: Innovation and technology for gender equality"** and it aims to emphasise the importance of technology in bringing gender issues to light

14. (c)

Explanation:

- The map shows Saudi Arabia, officially the **Kingdom of Saudi Arabia,** a desert country in southwestern Asia (Middle East) that occupies most of the Arabian Peninsula.
- The kingdom is bounded by the Gulf of Aqaba and the **Red Sea in the west** and the **Persian Gulf in the east.** Border countries are **Iraq, Jordan, Kuwait, Oman, Qatar, United Arab Emirates** and **Yemen. Hence, option (c) is correct.**
- Saudi Arabia shares **maritime boundaries** with **Egypt, Sudan,** and **Yemen** in the Red Sea, and with **Iran** and **Bahrain** in the Persian Gulf.
- The country is the largest Arab state with a land of more than two million km²; compared, the sheikdom is about four times the size of France, or somewhat larger than one quarter the size of the contiguous United States.

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15. (b)

Explanation:

- Shared values of **pluralistic, Westminster-style democracies, Commonwealth traditions, expanding economic engagement, and increasing high-level interaction** have underpinned the India-Australia bilateral relationship.
- Common traits, including **strong, vibrant, secular, and multicultural democracies, a free press, an independent judicial system,** and English language, serve as the foundation for closer co-operation.
- In 2020, Prime ministers of both the countries elevated bilateral relationship from Strategic Partnership to **Comprehensive strategic Partnership** during India-Australia Leaders' Virtual Summit. Both countries have 2+2 dialogue mechanism to strengthen their bilateral relation. **Hence, statement (1) is correct.**
- The **Mutual Logistics Support Agreement** (MLSA) was signed during the Virtual Summit in June 2020 to enhance defence cooperation. **Hence, statement (2) is correct.**
- Both countries are part of Quadrilateral Security Dialogue **(Quad), Malabar Exercise, G20.** However, **Australia** is **not** the **member of Shanghai Cooperation Organisation (SCO).** Members of SCO are **China, Kazakhstan, Kyrgyzstan, Russia, Tajikistan, Uzbekistan, India, Pakistan. Hence, statement (3) is NOT correct.**

16. (a)

Explanation:

- **Ethanol:** It is one of the principal biofuels, which is naturally produced by the fermentation of sugars by yeasts or via petrochemical processes such as ethylene hydration.

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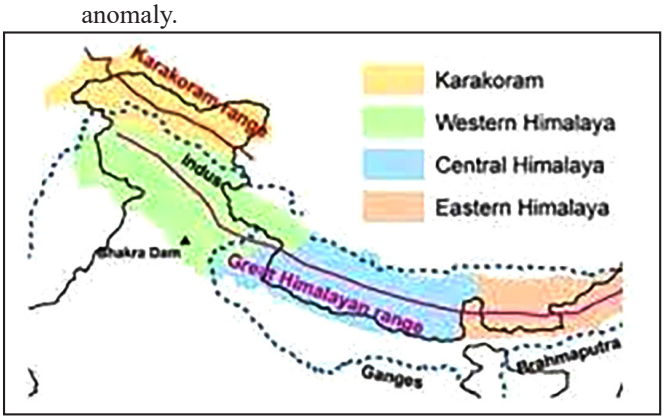
- **Ethanol Blending Programme (EBP):** It is aimed at reducing the country's dependence on crude oil imports, cutting carbon emissions and boosting farmers' incomes.
- **Blending Target:** The Government of India has advanced the target for **20% ethanol blending** in petrol **(also called E20) to 2025** from 2030. **Hence, statement (2) is NOT correct.**
- Ethanol is a less polluting fuel and offers equivalent efficiency at a lower cost than petrol. **Hence, statement (1) is correct.**
- By blending ethanol into gasoline, it can reduce the amount of petrol required to run a car, thereby reducing dependence on imported, expensive, and polluting petroleum.

17. (b)

Explanation:

- **The Karakorams** are part of a **complex of mountain ranges** at the centre of Asia, including the Hindukush to the west, the Pamirs to the northwest, the Kunlun Mountains to the northeast, and the Himalayas to the southeast. **The Karakorams cover parts of Afghanistan, China, India, Pakistan, and Tajikistan.**
- The **Karakoram Anomaly** refers to the puzzling observation that glaciers in the **Karakoram Mountain range in the Himalayas have been gaining mass and increasing in thickness,** contrary to the trend of glacier retreat observed in many other parts of the world due to global warming. **Hence, option (b) is correct.**
- Further a study suggests that the precipitation intensity of Western Disturbancess impacting Karakoram has **increased by around 10% in the last two decades,** which only enhances their role in sustaining the regional anomaly.



18. (a)

Explanation:

- **Food and Agriculture Organization (FAO)** of the United Nations released Global Assessment of Soil Carbon in Grasslands. **Hence, statement (1) is correct.**
- This report provides a **comprehensive analysis of the state of carbon stocks** and potential in grassland soils around the world.
- It measures the baseline of stocks of **Soil Organic Carbon (SOC)** in semi-natural as well as managed grasslands and estimated their potential of SOC sequestration.
- **SOC is a measurable component of soil organic matter.** Organic matter makes up only around 2-10% of most soil's mass and has an important role in the chemical, physical and biological function of agricultural soils.
- According to the report, most of the **world's grasslands have a positive carbon balance and not negative,** meaning the land is stable or well-maintained.
- However, negative carbon balance was also found in East Asia, Central and South America, and Africa south of the Equator. **Hence, statement (2) is NOT correct.**

19. (a)

Explanation:

- **Geo-heritage** refers to the geological features which are inherently or culturally significant offering insight to earth's evolution or history to earth science or that can be utilized for education.
- **Geological Survey of India (GSI) is the parent body** which is making efforts towards identification and protection of **geo-heritage sites/national geological monuments** in the country.
- **The GSI has declared 32 geo-heritage sites,** including the Siwalik Fossil Park, Himachal Pradesh; Stromatolite Fossil Park, Jharmarkotra Rock Phosphate deposit, Udaipur district, Akal Fossil Wood Park, Jaisalmer, but several are in stages of disrepair. **Hence, statement (1) is correct.**
- **UNESCO Global Geoparks** are single, unified geographical areas where sites and landscapes of international geological significance are managed with a holistic concept of protection, education and sustainable development.

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- While there are **169 UNESCO Global geoparks** spread across **44 countries,** India is yet to have one of its own. **Geo heritage sites are different from Global geoparks,** and the former is not declared under the latter. **Hence, statement (2) is NOT correct.**

20. (b)

Explanation:

- **Pangolins** are **nocturnal mammals (not rodents)** that dig burrows and feed on ants and termites, and play a vital role in ecosystem management, mostly in aerating and adding moisture to the soil. **Hence, statement (1) is NOT correct.**
- Pangolins are known for their unique appearance. They have **scales made of keratin** that cover their entire body. When threatened, they can roll into a ball to protect themselves. **Hence, statement (3) is correct.**
- In the red list of animals published by the International Union for Conservation of Nature (IUCN), **Indian Pangolin is listed in the "Endangered (EN)" category. The Chinese pangolin has been listed as "critically endangered".**
- In India, pangolins, **both Indian and Chinese, are protected under Schedule 1** of the Wildlife (Protection) Act 1972 that prohibits its hunting, trade or any other form of utilisation. **Hence, statement (2) is correct.**
- **All pangolin species** are listed in Convention on International Trade in Endangered Species **(CITES) Appendix I.**

21. (a)

Explanation:

- **Liquid Nano Urea** is urea in the form of a **nanoparticle.** It is a nutrient (liquid) to provide nitrogen to plants as an alternative to the conventional urea. It is Indigenously developed and introduced by the **Indian Farmers Fertiliser Cooperative Limited (IFFCO)** for farmers across the world. **Hence, statement (3) is NOT correct.**
- Urea is a **chemical nitrogen fertiliser,** white in colour, which artificially provides nitrogen, a major nutrient required by plants. It is **developed to replace conventional urea** and it can curtail the requirement of the same by at least 50%.
- It has been found effective and efficient for plant nutrition which increases production with improved nutritional quality. While **conventional urea has an efficiency of about 25%,** the efficiency of **LNU can be as high as 85-90%. Hence, statement (1) is NOT correct.**
- LNU is **sprayed directly on the leaves** and gets absorbed by the plant. Fertilisers in nano form provide a targeted supply of nutrients to crops, as they are absorbed by the stomata, pores found on the epidermis of leaves. **Hence, statement (2) is correct.**

22. (b)

Explanation:

- India's Carbon Credit Trading Scheme, 2023 (CCTS 2023) was notified by the Government of India in **June 2023** under **the Energy Conservation Act, 2001,** to develop the country's **first-ever domestic carbon market.**
- The scheme also entails the formation of **a National Steering Committee** which will govern the functioning of the Indian carbon market.
- **Below mentioned are the key stakeholders under it–**
  - **The Bureau of Energy Efficiency (BEE)** is the administrator for the integrated carbon market and is responsible for the development of the greenhouse gas emissions trajectory and the targets for the entities to be obligated under the notification. **Hence, statement (1) is correct.**
  - **The Grid Controller of India Limited** is the designated agency for the maintenance of the integrated carbon market registry.
  - **The Central Electricity Regulatory Commission (CERC)** is the regulator for the trading of carbon credit certificates. They are intended to safeguard the interests of the buyers and the sellers, decide on the frequency of trading, and take action to prevent fraud or mistrust. **Hence, statement (2) is correct.**
- The key compliance requirements under CCTS 2023 are listed below:
  - A Memorandum of Procedure, based on the recommendations from the BEE, will decide on the list of the sectors and the obligated entities who will be mandated to record and maintain the greenhouse gas emissions intensity data.

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- It will recommend the greenhouse gas emission intensity targets for the obligated entities to the Ministry of Environment Forest and climate change for notification under the Environment Protection Act, 1986.
- The obligated entities will be required to achieve the greenhouse gas emission intensity targets notified by the Ministry of Environment Forest and climate change. **One carbon credit certificate will be equivalent to one tonne of CO2e (carbon dioxide equivalent). Hence, statement (3) is NOT correct.**

23. (c)

Explanation:

- One **Carbon Credit** or Carbon Offset represents **one metric tonne of Carbon Dioxide that has either been removed from the atmosphere or recycled.** While carbon credits generally represent the reduction in greenhouse gas emissions, Carbon offsets represent greenhouse gas removal undertaking recycling, carbon sequestration, and other similar activities.
- In order to create a sustainable environment, **Carbon was recognized as a tradeable good at the United Nations Kyoto Protocol in 1997.** The Kyoto Protocol of United Nation Framework convention on Climate change was adopted on 11 December 1997. Owing to a complex ratification process, it entered into force on 16 February 2005. **Hence, option (c) is correct.**
- One important element of the Kyoto Protocol was the establishment of flexible market mechanisms, which are based **on the trade of emissions permits.** Under the Protocol, countries must meet their targets primarily through national measures. However, the Protocol also offers them an additional means to meet their targets by way of three market-based mechanisms:
  - **International Emissions Trading**
  - **Clean Development Mechanism**
  - **Joint implementation**
- This was also echoed and further emphasized in the Paris Climate Agreement in 2015. According to these agreements, a country is allowed to transfer and sell the excess capacity of Carbon Credits collected by it to other countries/institutions or organizations that do not have enough Carbon Credits to meet its climate targets.

24. (b)

Explanation:

- The Asiatic lion is a population of *Panthera leo leo* that today survives **in the wild only in India. Hence, statement (1) is correct.**
- **Asiatic lions are slightly smaller than African lions.** Adult males weigh 160 to 190 kg, while females weigh 110 to 120 kg. **Hence, statement (2) is correct.**
- Asiatic lions were once distributed up to the state of West Bengal in east and Rewa in Madhya Pradesh, in central India.
- At present **Gir National Park and Wildlife Sanctuary is the only abode of the Asiatic lion.** The last surviving population of the Asiatic lions is a compact tract of dry deciduous forest and open grassy scrublands in southwestern part of Saurashtra region of Gujarat.
- The Gujarat government has proposed **a second home for Asiatic lions in Gujarat at Barda Wildlife Sanctuary,** about 100km away from their present home at Gir National Park, finally pushing ahead with a long-delayed plan to move some lions from their only and very crowded home in the country, a move that would also protect the population from diseases. **Hence, statement (3) is NOT correct.**
- Listed in **Schedule I** of Wildlife (Protection) Act 1972, in **Appendix I** of CITES and as **Endangered** on IUCN Red List.

25. (d)

Explanation:

- **Liquid trees,** an innovative biotechnological tool developed by **Serbian scientist Dr Ivan Spasojevic.** The bioreactors are well-suited to the built environment of **Belgrade, Serbia.** Belgrade has gone in a different direction, creating artificial "liquid trees" to capture carbon dioxide.
- The concept of liquid trees involves using a photobioreactor with microalgae to bind carbon dioxide present in the environment through photosynthesis, converting it into oxygen. **Hence, option (d) is correct.**
- One **LIQUID3** bioreactor is capable of replacing one 10-year-old adult tree, or a full 200 m^2 of lawn. This is of huge benefit, as the bioreactors can be built and installed far more quickly and start processing polluted air immediately.

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- The devices are solar-powered, with panels on top to capture light and turn it into electricity. Built-in lighting allows the microalgae to photosynthesize year-round, even in the dimmer winter months.

26. (a)

Explanation:

- Any hydrocarbon fuel that is produced from an organic matter (living or once living material) in a short period of time (days, weeks, or even months) is considered a biofuel.
- **First-generation biofuels** are derived from food crops such as corn, sugar cane, sunflower oil, soybeans, starch, **sugar beet** and sucrose.
- **Second-generation biofuels** are derived from plants that are not used for food. They are sourced from things like **agricultural waste, wood chips, and grasses.**
- **Third-generation biofuels** are made from algae. **Algae** are a type of aquatic plant that can be grown in salt water or fresh water. They grow very quickly and do not require land or freshwater to grow.
- **Fourth Generation Biofuel** are derived from pyrolysis, Solar to fuel and **genetically modified organisms.**

Hence, option (a) is correct.

27. (b)

Explanation:

- The UN 2023 Water Conference – formally known as the 2023 Conference for the Midterm Comprehensive Review of Implementation of **the UN Decade for Action on Water and Sanitation (2018-2028)** – took place at UN Headquarters in New York, 22-24 March 2023, co-hosted by Tajikistan and the Netherlands.
- **UN 2023 Water Conference's theme, "Our watershed moment: uniting the world for water".**
- The **last water conference was held in 1977** (in Mar Del Plata, Argentina) and resulted in a **global action plan to provide safe drinking water for everyone.** This plan helped reduce the number of people without access to safe drinking water in many developing countries. **Hence, statement (2) is correct.**
- One useful tool here was the **W12+ Blueprint, a UNESCO platform** that hosts city profiles and case studies of programs, technologies, and policies that address common water security challenges.
- The complexity of today's water problems was reflected in the conference's proceedings, resulting in fragmented discussions, and **no binding commitments.** Instead, there were **713 diverse voluntary commitments by philanthropic donors, governments,** corporations, and NGOs. **Hence, statement (1) is NOT correct.**

28. (d)

Explanation:

- According to a new U.N. report, earth's protective ozone layer is slowly but noticeably healing at a pace that would fully mend the hole over Antarctica in about 43 years.
- While this is an achievement, the scientists warned of the detrimental effects of geoengineering technologies such as stratospheric aerosol injection on the ozone layer.
- **Aerosol sprays,** like other commonly used substances such as **dry-cleaning solvents,** refrigerants and fumigants, contain Ozone-Depleting Substances (ODS) including **chlorofluorocarbons (CFCs),** hydrochlorofluorocarbons (HCFCs)**, halons,** methyl bromide, carbon tetrachloride, and **methyl chloroform.**
- For the first time, **the Scientific Assessment Panel examined the potential effects on ozone of the intentional addition of aerosols into the stratosphere,** known as **Stratospheric Aerosol Injection** (SAI).

Hence, option (d) is correct.

29. (a)

Explanation:

- **Deepor Beel** Wetland, which is the **only Ramsar Site** in Assam. **Hence, option (a) is correct.**
- It is one of the **largest freshwater lakes in Assam** and an Important Bird Area categorised by Birdlife International.
- Deepor Beel has been designated as a Ramsar Site in November, 2002.
- It is located towards the southwest of Guwahati city, Assam and is the erstwhile water channel of **River Brahmaputra.** The lake expands up to 30 sq. km in summer and reduces to about 10 sq. km in the winter.
- The Assam Forest Department manages the 4.1 sq km Deepor Beel Wildlife Sanctuary in the central part of the greater wetland named Deepor Beel.

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- **Importance:** It constitutes a unique **habitat for aquatic flora** and avian **fauna.** It has both biological and environmental importance besides being the only major storm-water storage basin for Guwahati city. It provides a means of livelihood for a number of local families.

30. (c)

Explanation:

- The Indian Forest Act,1927 aimed to regulate the movement of forest produce, and duty leviable forest produce. It also explains the procedure to be followed for declaring an area as Reserved Forest, Protected Forest or a Village Forest.
  - **Reserved Forests:** Reserve forests are the most restricted forests and are constituted by **the State Government** on any forest land or wasteland which is the property of the Government.
    - In reserved forests, local people are prohibited, unless specifically allowed by a Forest Officer in the course of the settlement.
  - **Protected Forests: The State Government** is empowered to constitute any land other than reserved forests as protected forests over which the Government has proprietary rights and the power to issue rules regarding the use of such forests.
    - This power has been used to establish State control over trees, whose timber, fruit or other non-wood products have revenue-raising potential.

Hence, statement (1) is correct.

  - **Degree of protection :Reserved forests > Protected forests > Village forest**
- **Forest Conservation Act, 1980:** The Forest Conservation Act, 1980 stipulated that **the central permission** is necessary to practice sustainable agro-forestry in forest areas.
  - Violation or lack of permit was treated as a criminal offence.
  - Restriction on the dereservation of forests or use of forest land for non-forest purpose.—Notwithstanding anything contained in any other law for the time being in force in a State, **no State Government or other authority shall make, except with the prior approval of the Central Government,** any order directing—
    - that any reserved forest (within the meaning of the expression "reserved forest" in any law for the time being in force in that State) or any portion thereof, shall cease to be reserved;
    - that any forest land or any portion thereof may be used for any non-forest purpose. **Hence, statement (2) is correct.**

31. (c)

Explanation:

- The **Western Ghats,** also known as the Sahyadri mountains, is a mountain range that runs parallel to the western coast of India.
- It is a **UNESCO World Heritage Site** and is one of the eight **"hottest hotspots"** of biological diversity in the world. **Hence, statement (1) and (2) are correct.**
- The Western Ghats stretch for 1,600 km from **the Tapti River in Gujarat to Kanyakumari in Tamil Nadu**. The range passes through six states in India: **Gujarat, Maharashtra, Goa, Karnataka, Kerala, and Tamil Nadu. Hence, statement (3) is correct.**
- The mountain range starts at the border of Gujarat and Maharashtra and runs down to Kanyakumari in Tamil Nadu.
- The Western Ghats are known by different names in different regions of India.
- In **Tamil Nadu,** it is known as the **Nilgiri hills,** in **Karnataka** as the **Malnad hills,** in **Maharashtra** as the Sahyadri range, and in **Kerala** as the **Anaimalai hills.**
- The Western Ghats are home to a wide variety of flora and fauna such as Indian Elephants, Bengal Tigers, Indian Leopards, Nilgiri Tahr, Indian Bison, Lion-tailed Macaque, Indian Giant Squirrel and Malabar Giant squirrel.

32. (c)

Explanation:

- 6G (Sixth-Generation Wireless) technology is the successor to 5G cellular technology.
- It will be able to use **higher frequencies** than 5G networks and provide substantially higher capacity and much **lower latency** (delay). **Hence, statement (1) is correct.**
- It supports one microsecond latency communication (delay of one-microsecond in communication).

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- This is 1,000 times faster - or 1/1000th the latency - than one millisecond throughput.
- It seeks to utilize the terahertz band of frequency which is currently unutilized.
- Terahertz waves fall between **infrared waves and microwaves** on the electromagnetic spectrum. **Hence, statement (2) is correct.**
- These waves are extremely tiny and fragile, but there's a huge amount of free spectrum up there that would allow for spectacular data rates.

33. (c)

Explanation:

- A DNA vaccine is a type of vaccine that **uses a small piece of DNA that codes for a specific antigen** (a molecule that triggers an immune response) from a pathogen, such as a virus or bacterium, to stimulate an immune response. **Hence, statement (1) is correct.**
- The DNA is injected directly into the body's cells, where it instructs the cells to produce the antigen.
- DNA vaccines are third-generation vaccines. **Hence, statement (3) is correct.**
- The ZyCoV-D is the world's **first and India's indigenously developed** DNA based vaccine for COVID-19. **Hence, statement (2) is correct.**

34. (c)

Explanation:

- Dengue is a mosquito-borne tropical disease caused by the **dengue virus** (Genus Flavivirus),
- It is transmitted by the several species of mosquito within the genus Aedes, principally ***Aedes aegypti.***
- This mosquito also transmits chikungunya and Zika infection. **Hence, statement (1) is correct.**

Dengue Vaccine:

- The dengue vaccine CYD-TDV or Dengvaxia was approved by the **US Food & Drug Administration in 2019,** the first dengue vaccine to get the regulatory nod in the US.
  - **Dengvaxia is basically a live, attenuated dengue virus** which has to be administered in people of ages 9 to 16 who have laboratory confirmed previous dengue infection and who live in endemic areas. **Hence, statement (2) is correct.**

35. (b)

Explanation:

- The James Webb Space Telescope (JWST) telescope is the international collaboration between **NASA, the European Space Agency (ESA) and the Canadian Space Agency** which was launched in December 2021. **Hence, statement (1) is NOT correct.**
- It is **currently at a point in space known as the Sun-Earth L2 Lagrange point,** approximately 1.5 million km beyond Earth's orbit around the Sun. Lagrange Point 2 is one of the five points in the orbital plane of the Earth-Sun system.
- Lagrange Points are positions in space where the gravitational forces of a two-body system (like the Sun and the Earth) produce enhanced regions of attraction and repulsion.
- It's the **largest, most powerful infrared space telescope ever built.**
- It's the **successor to the Hubble Telescope.**
- It can see backwards in time to just after the Big Bang by looking for galaxies that are so far away that the light has taken many billions of years to get from those galaxies to our telescopes. Thus, unravelling the history of the universe. **Hence, statement (2) is correct.**

36. (b)

Explanation:

- Singareni Thermal Power Plant (STPP) in **Telangana** is set to become the first public sector coal-based power generating station in the South. **Hence, statement (1) is NOT correct.**
- It has won the best fly ash utilisation award twice for the 100% utilisation of the fly ash generated.
- It is first among the State PSUs in the country to have a Flu Gas Desulphurization (FGD) plant. **Hence, statement (2) is correct.**
- The FGD plant would process the sulphur and other gases (nitrogen oxides) generated in firing the coal for power generation. The FGD plant removes Sulphur Dioxide from the flue gas before it is released into the atmosphere and hence reduces its impact on the environment.
- These are characterised as either "wet" or "dry" corresponding to the phase in which the flue gas reactions take place.

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37. (a)

Explanation:

- **The amount of oxygen required by bacteria to break down the organic matter present in a certain volume of a sample of water, is called Biochemical Oxygen Demand (BOD). Hence, statement (1) is NOT correct.**
- Clean water would have BOD value of less than 5 ppm whereas highly polluted water could have a BOD value of 17 ppm or more.
- Water pollution by organic wastes is measured in terms of BOD.s
- **The higher value of BOD indicates low dissolved content of oxygen in the water. Hence, statement (2) is correct.**
- **Since BOD is limited to biodegradable materials, it is not a reliable method of measuring water pollution. Hence, statement (3) in NOT correct.**
- Chemical Oxygen Demand (COD) measures the amount of oxygen in parts per million required to oxidise organic (biodegradable and non-biodegradable) and oxidizable inorganic compounds in the water sample.

38. (c)

Explanation:

- Physicist CV Raman won the **Nobel Prize in 1930 for his discovery of the Raman Effect.**
- Raman effect refers to the inelastic scattering of light by matter, resulting in a shift in the frequency of the scattered light.
- **In simpler words, it is a change in the wavelength of light that occurs when a light beam is deflected by molecules. Hence, statement (1) is correct.**
- It forms the basis for Raman spectroscopy which is used by chemists and physicists to gain information about materials.
- **Spectroscopy is the study of the interaction between matter and electromagnetic radiation. Hence, statement (2) is correct.**

39. (a)

Explanation:

- Researchers spotted the six monster galaxies using the Cosmic Evolution Early 44 Release Science programme of James Webb Space Telescope (JWST).
- Researchers turned the telescope to a patch of the sky close to the Big Dipper, which appears to harbor a group of stars that form a pattern in the night sky.
- The Hubble space telescope first observed this region in the 1990s.
- The **Big Dipper is an asterism of stars, in the constellation Ursa Major** (also known as the Great Bear). It consists of seven bright stars, four forming a rectangular "bowl" shape and three forming a "handle". It is often used as a navigational tool, a reference point for stargazing, and as a symbol in popular culture. **Hence, option (a) is correct.**
- Despite having the same mass as the Milky Way, one of the galaxies is 30 times smaller. This indicates the presence of large and mature but remarkably compact galaxies teeming with stars far sooner than scientists had considered possible.

40. (b)

Explanation:

In Buddhism, **mudras are hand gestures or positions that are used during meditation and other practices** to help focus the mind, channel energy, and deepen one's connection to the teachings. Some of the common mudras in Buddhism are:

- **Dhyana Mudra:** In this, the hands are placed on the lap, with the right hand on top of the left, and the thumbs touching. This mudra **symbolises meditation, concentration, and inner peace.**
- **Anjali Mudra:** Most common mudra used in Buddhism which involves pressing the palms together in front of the chest, with the fingers pointing upwards. It **represents respect, greeting, and gratitude.**
- **Vitarka Mudra:** It involves holding the right hand up, with the thumb and index finger touching to form a circle. It represents the **transmission of knowledge and the communication of the Buddha's teachings.**
- **Varada Mudra:** In this, the right hand is extended downwards, with the palm facing outwards. It represents generosity, compassion, and the granting of wishes. **Hence, pair (1) is NOT correctly matched.**
- **Abhaya Mudra:** This mudra involves raising the right hand up to shoulder height, with the palm facing outwards. It represents fearlessness, protection, and the dispelling of negativity. **Hence, pair (2) is correctly matched.**

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➲ **Bhumisparsha Mudra:** This mudra involves touching the ground with the fingertips of the right hand, while the left hand rests on the lap. It represents the moment of the Buddha's enlightenment, and the gesture symbolises the earth witnessing his attainment of enlightenment. **Hence, pair (3) is correctly matched.**

41. (a)

Explanation:

- Recently, the **Ministry of Statistics and Programme Implementation has released the Women and Men in India 2022 report. Hence, option (a) is correct.**
- The **sex ratio at birth went up by three points** to 907 in 2018-20 from 904 in 2017-19.
- India's sex ratio (females per 1,000 males) is **expected to improve** to 952 by 2036, up significantly from 943 in 2011.
- India's Labour Force Participation Rate for those above 15 years of age has been on the rise since 2017-2018. However, women are severely lagging behind men.
- The **population growth, already on a downward trend** from 2.2% in 1971 to 1.1% in 2021, is projected to fall further to 0.58% in 2036.
- India's age and sex structure, as per which the **population under 15 years of age is expected to decline and the population above 60 years is expected to increase by 2036.**
- Accordingly, the **population pyramid will undergo a shift** as the base of the pyramid in 2036 would narrow down, while the middle would be broadened.

42. (b)

Explanation:

Passes	Features
Banihal Pass	Kashmir Valley with the outer Himalaya and the plains to the south.
Bara-Lacha-La Pass	Lahaul district in Himachal Pradesh with Leh district in Ladakh.
Fotu La Pass	Leh with Kargil of Ladakh
Rohtang Pass	Kullu Valley with the Lahaul and Spiti Valleys of Himachal Pradesh. It is located in pir panjal range. **Hence, statement (2) is correct.**
Shipki La Pass	Kinnaur district of Himachal Pradesh with Autonomous Region of Tibet, China.
Jelep La Pass	Sikkim with Autonomous Region of Tibet, China
Nathu La Pass	Sikkim with Autonomous Region of Tibet, China
Lipu Lekh Pass	Chaudans valley of India with Autonomous Region of Tibet, China. It is located close to the tri junction of Uttarakhand (India), China and Nepal
Zoji la pass	Zoji la is located in Drass, Ladakh at an altitude above 11,650 ft and historically remains closed for the major part of the winter season.**Hence, statement (1) is NOT correct.**

43. (c)

Explanation:

- Phosphor-Gypsum, **a waste product from manufacturing fertilizer,** emits radon, a radioactive gas.
- **It also contains the radioactive elements uranium, thorium and radium.**
- National Highways Authority of India (NHAI) along with the Department of Fertilizers, Ministry of Chemicals & Fertilizers will take up **field trials on NHAI projects for the use of Phosphor-Gypsum in National Highway construction to achieve a circular economy in the use of Gypsum.**
- NHAI is also encouraging the **use of waste plastic in road construction,** which has been tested very successfully. Studies have established that roads built using plastic waste are durable, sustainable and increase the life of bitumen (a substance produced through the distillation of crude oil).
- **Similarly, NHAI has used Fly Ash for the construction of Highways and flyover embankments.**
- Fly ash is an unwanted unburnt residue of coal combustion in a coal thermal power plant. It is emitted along with flue gases (a waste gas from a combustion process) during the burning of coal in a furnace and collected using electrostatic precipitators.
- **Phosphor-gypsum is not used in beauty products. Though, gypsum powder is used in beauty products**

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to reduce acne, wrinkles and so on. But is not extensively used, because of its allergic properties. Hence, option (c) is correct.

44. (a)

Explanation:

- **The atmosphere that surrounds the earth are concentric layers of air or regions and each layer has different density.**
- The lowest region of atmosphere in which the human beings along with other organisms live is called troposphere.
- It extends up to the average height of approx. 13 km from sea level.
- **Atmospheric pollution is generally studied as tropospheric and stratospheric pollution.**
- The presence of **ozone in the stratosphere** prevents about 99.5 per cent of the sun's harmful ultraviolet (UV) radiations from reaching the earth's surface and thereby protecting humans and other animals from its effect.
- Above the troposphere, between 10-50 km above sea level lies stratosphere.
- The stratosphere contains dinitrogen, dioxygen, ozone and little water vapour.
- **Troposphere is a turbulent, dusty zone containing air, water vapour and clouds. This is the region of strong air movement and cloud formation.**
- **Tropospheric pollution occurs due to the presence of undesirable solid or gaseous particles in the air.**
- The following are the major gaseous and particulate pollutants present in the troposphere:
  - **Gaseous air pollutants:** These are oxides of sulphur, nitrogen and carbon, hydrogen sulphide, hydrocarbons, ozone and other oxidants.
  - **Particulate pollutants:** These are dust, mist, fumes, smoke, smog etc.

Hence, both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I.

45. (c)

Explanation:

Oxides of Sulphur:

- It is **produced when sulphur containing fossil fuel is burnt. The most common, sulphur dioxide, is a gas that is poisonous to both animals and plants. Hence, statement (1) is correct.**
- It has been reported that even a low concentration of sulphur dioxide causes respiratory diseases, stiffness of flower buds. However, the presence of particulate matter in polluted air catalyses the oxidation of sulphur dioxide to sulphur trioxide.

Oxides of Nitrogen:

- Dinitrogen and dioxygen are the main constituents of air. **These gases do not react with each other at a normal temperature.**
- At high altitudes when lightning strikes, they combine to form oxides of nitrogen. **NO_2 is oxidised to nitrate ion, NO_3^- which is washed into soil, where it serves as a fertilizer. Hence, statement (2) is NOT correct.**
- Nitrogen dioxide is a lung irritant that can lead to an acute respiratory disease in children. Nitrogen dioxide is also harmful to various textile fibres and metals.

Carbon monoxide:

- It is one of the most serious air pollutants.
- It is a colourless and odourless gas, **highly poisonous to living beings because of its ability to block the delivery of oxygen to the organs and tissues. Hence, statement (3) is correct.**
- It binds to haemoglobin to form carboxyhaemoglobin, which is more stable than the oxygen-haemoglobin complex. In blood, when the concentration of carboxyhaemoglobin reaches about 3–4 per cent, the oxygen carrying capacity of blood is greatly reduced.

46. (c)

Explanation:

- **Carbon dioxide (CO_2) is released into the atmosphere by respiration, burning of fossil fuels for energy, and by decomposition of limestone during the manufacture of cement. Hence, statement (2) is correct.**
- It is also emitted during volcanic eruptions.
- **Carbon dioxide gas is confined to troposphere only.** Normally it forms about 0.03 per cent by volume of the atmosphere. **Hence, statement (1) is correct.**
- With the increased use of fossil fuels, a large amount of carbon dioxide gets released into the atmosphere.
- **Green plants require CO_2 for photosynthesis** and they, in turn, emit oxygen, thus maintaining the delicate balance in the atmosphere.
- Deforestation and burning of fossil fuel increases the CO_2 level and disturb the balance in the atmosphere. The increased amount of CO_2 in the air is mainly responsible for global warming.

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47. (d)

Explanation:

- **Normally rainwater has a pH of 5.6 due to the presence of H+ ions** formed by the reaction of rainwater with carbon dioxide present in the atmosphere. **Hence, statement (1) is NOT correct.**
- **When the pH of the rainwater drops below 5.6, it is called acid rain. Hence, statement (2) is NOT correct.**
- Acid rain refers to the ways in which acid from the atmosphere is deposited on the earth's surface.
- It is a **byproduct of a variety of human activities that emit the oxides of sulphur and nitrogen in the atmosphere.**
- SO_2 and NO_2 after oxidation and reaction with water are major contributors to acid rain, because polluted air usually contains particulate matter that catalyse the oxidation.
- Ammonium salts are also formed and can be seen as an atmospheric haze (aerosol of fine particles).
- Aerosol particles of oxides or ammonium salts in rain drops result in wet deposition.
- **SO_2 is also absorbed directly on both solid and liquid ground** surfaces and is thus deposited as dry deposition.
- Acid rain damages buildings and other structures made of stone or metal. The Taj Mahal in India has been affected by acid rain.

48. (d)

Explanation:

Acid rain can be reduced by the following:

- **Reducing the emission of sulphur dioxide and nitrogen dioxide in the atmosphere.**
- Use of less vehicles driven by fossil fuels; use of less sulphur content fossil fuels for power plants and industries.
- **Use of natural gas** which is a better fuel than coal or use coal with less sulphur content.
- **Catalytic converters must be used in cars to reduce the effect of exhaust fumes on the atmosphere.** The main component of the converter is a ceramic honeycomb coated with precious metals — Pd, Pt and Rh.
- We can also **reduce the acidity of the soil by adding powdered limestone to neutralise the acidity of the soil. Hence, option (d) is correct.**

49. (a)

Explanation:

- **Particulate pollutants are the minute solid particles or liquid droplets in air.**
- Particulates in the atmosphere may be **viable or non-viable.**
  - The **viable particulates e.g., bacteria, fungi, moulds, algae etc., are minute living organisms** that are dispersed in the atmosphere. **Hence, statement (1) is correct.**
  - **Human beings are allergic to some of the fungi found in air and not all particulates. Hence, statement (2) is NOT correct.**
  - Non-viable particulates may be classified according to their nature and size as follows:
    - **Smoke particulates** consist of solid, or mixture of solid and liquid particles formed during combustion of organic matter. Examples are cigarette smoke, smoke from burning of fossil fuel, garbage and dry leaves, oil smoke etc.
    - **Dust** is composed of fine solid particles (over 1μm in diameter), produced during crushing, grinding and attribution of solid materials.
    - **Mists** are produced by particles of spray liquids and by condensation of vapours in air.
    - **Fumes** are generally obtained by the condensation of vapours during sublimation, distillation, boiling and several other chemical reactions.
- Particulate pollutants bigger than 5 microns are likely to lodge in the nasal passage, whereas particles of about 10 micron enter into lungs easily.
- Lead used to be a major air pollutant emitted by vehicles. Lead interferes with the development and maturation of red blood cells.

50. (b)

Explanation:

- The word **smog is derived from smoke and fog.**
- This is the **most common example of air pollution** that occurs in many cities throughout the world.
- There are **two types of smog:**
  - **Classical smog occurs in cool humid climate.** It is a **mixture of smoke, fog and sulphur dioxide.** Chemically it is a **reducing mixture** and so it is also called as reducing smog.

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- **Photochemical smog occurs in warm, dry and sunny climate.** The main components of the photochemical smog result from the action of sunlight on unsaturated hydrocarbons and nitrogen oxides produced by automobiles and factories. **Photochemical smog has high concentration of oxidising agents and is, therefore, called as oxidising smog.**
- Since high concentration of oxidising agent is the pre-requisite for photochemical smog. **Hence, option (b) is correct.**

51. (a)

Explanation:

- A circular economy is an economic model designed to **minimize waste, promote sustainability,** and **maximize** the **efficient use of resources** throughout their lifecycle. **Hence, statement (2) is correct.**
- Unlike the traditional linear economy, which follows a "take-make-dispose" pattern, a circular economy aims to create a closed-loop system where products, materials, and resources are **reused, refurbished, remanufactured,** and **recycled** to extend their value and reduce environmental impacts.
- In a circular economy, the emphasis is on designing products with longevity in mind, using eco-friendly materials, and ensuring easy disassembly and recycling at the end of their life. It **minimizes resource consumption** and extraction. **Hence, statement (1) is NOT correct.**
- This approach not only reduces the extraction of raw materials but also decreases the generation of waste and greenhouse gas emissions.
- One key aspect of the circular economy is the concept of "reduce, reuse, recycle." This means minimizing resource consumption, **extending product lifecycles,** and ensuring that **materials** are continually **reintegrated into** the **production process.**
- It encourages businesses and consumers alike to be more conscious of their **environmental footprint** and make sustainable choices. It does not relate to minimizing environmental regulations. **Hence, statement (3) is NOT correct.**
- The benefit of a circular economy includes the **reduction of waste** in landfills, **conservation of natural resources,** decreased pollution, and economic opportunities through the development of green technologies and sustainable practices.
- Transitioning to a circular economy is a crucial step toward a more sustainable and environmentally responsible future.

52. (c)

Explanation:

- India heavily relies on groundwater for irrigation to support its **agriculture,** which is a lifeline for the **economy** and **food security.**
- However, the unsustainable **over-extraction of groundwater,** often exceeding the natural recharge rates, has severe consequences. Over-extraction of groundwater for irrigation is a major contributor to groundwater pollution in India. **Hence, statement (1) is correct.**
- As groundwater levels drop due to **excessive pumping,** it creates a vacuum in underground aquifers. This vacuum can draw in contaminants from the surface, including agricultural chemicals like fertilizers and pesticides.
- Excessive pumping of groundwater can lead to the intrusion of contaminants from surface sources, such as **fertilizers** and **pesticides** from agriculture, into the groundwater, thereby polluting it. **Hence, statement (2) is correct.**
- These contaminants dissolve in the water and seep into the groundwater, resulting in groundwater pollution. This pollution can have detrimental effects on both the environment and public health, as contaminated groundwater is often used for drinking and domestic purposes in many rural areas.

53. (b)

Explanation:

- The **National Wildlife Action Plan** of the Ministry of Environment, Forest and Climate Change stipulated that state governments should declare **land** falling **within 10 km** of the boundaries of **national parks** and **wildlife sanctuaries** as eco-fragile zones or Eco-Sensitive Zones (ESZs) under the **Environment Protection Act, 1986. Hence, statement (3) is NOT correct.**
- While the 10-km rule is implemented as a general principle, **the extent of its application can vary.** Areas **beyond 10 km** can also be notified by the Union government as ESZs, if they hold larger ecologically important **"sensitive corridors".**

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- The basic aim is **to regulate certain activities around National Parks and Wildlife sanctuaries** so as to minimize the negative impacts of such activities on the fragile ecosystem encompassing the protected areas.
- These **zones serve** as **buffer** areas that help mitigate human activities' negative impacts on the adjoining natural habitats and wildlife. **Hence, statement (1) is correct.**
- These zones play a crucial role in the **holistic conservation approach,** recognizing that preserving biodiversity requires considering the needs of both wildlife and local communities. ESZs aim to strike a **balance between conservation** and **development,** ensuring that nature thrives while enabling sustainable livelihoods for nearby communities. **Hence, statement (2) is correct.**

54. (d)

Explanation:

- Prosopis chilensis, an **alien invasive plant** is threatening to pulverize native vegetation across 21 islands in the **Gulf of Mannar Biosphere Reserve. Hence, option (d) is correct.**
- It is a **drought-resistant plant native** to the arid regions of four **South American** countries such as **Argentina, Bolivia, Chile, and Peru.**
- It is a small to **medium-sized legume tree** that grows up to 12 m in height and 1 m in diameter.
- While the native vegetation "has lost ground to" *Prosopis chilensis* on some islands closer to the coast, the study underlined the "indiscriminate destruction of marine life" continuing despite efforts to educate and monitor the fishing community.

55. (d)

Explanation:

- **Spheroidal carbonaceous particles** (SCP), a component of fly ash, have been identified for the first time in an **Antarctic ice core,** according to a new study. SCPs have no other anthropogenic or natural sources other than fossil fuel combustion. Thus, they are an unambiguous environmental indicator of industrialization. **Hence, statement (3) is correct.**
- The study provided the first evidence that SCP's have not only been transported to continental Antarctica, but that those enduring physical markers of fossil fuel combustion have been trapped in ice layers since the early decades of the 20th century.
- Fly ash is an **unwanted unburnt residue of coal combustion in a coal thermal power plant.**
- It is **emitted along with flue gases** during the burning of coal in a furnace and collected using electrostatic precipitators.
- The **fly ash collected with the help of precipitators is converted into a wet slurry** to minimize fugitive dust emissions.
- It is then transported to the scientifically designed ash ponds through slurry pipelines.
- Composition of fly ash **depends upon the composition of coal being burnt.** It may contain **Beryllium, Arsenic, unburnt Carbon, Silicon Oxides, Dioxins, aluminum oxide, ferric oxide, calcium oxide,** etc. **Hence, statement (1) is correct.**
- It is **used in concrete and cement products, road base, metal recovery,** and mineral filler among others. In agriculture, fly ash improves water holding capacity and soil aeration. **Hence, statement (2) is correct.**

56. (b)

Explanation:

- The **National Tiger Conservation Authority** (NTCA) is a critical organization in India dedicated to the protection and conservation of tigers and their habitats. It was constituted under the provisions of the **Wildlife (Protection) Act, 1972. Hence, statement (1) is NOT correct.**
- NTCA operates under the Ministry of Environment, Forest and Climate Change (MoEFCC). It is set up under the **Chairmanship** of the **Minister for Environment Forests and Climate Change. Hence, statement (2) is correct.**
- Its primary objective is to ensure the long-term survival of the endangered Bengal tiger and other wild tiger subspecies in India.
- The NTCA plays a multifaceted role in tiger conservation. It is responsible for **formulating policies, guidelines,** and **action plans for tiger conservation** in collaboration with state governments and other stakeholders.
- The authority also oversees the effective implementation of these strategies, monitoring tiger populations, and assessing the status of tiger reserves across the country. It creates the **Annual Plan of Operations of Tiger Reserves. All India Tiger Estimation** is conducted by it. **Hence, statement (3) is correct.**

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- One of the NTCA's significant initiatives is the creation and management of the **Special Tiger Protection Force** (STPF), which aims to provide enhanced protection to tigers and their habitats by preventing poaching and illegal activities in and around tiger reserves.
- The NTCA promotes **community participation** and sustainable livelihoods for local communities living near tiger reserves, recognizing that their cooperation is vital for successful conservation efforts.

57. (d)

Explanation:

- Small Industries Development Bank of India (SIDBI) recently announced a new scheme Mission 50K-EV4ECO to boost the electric vehicle (EV) ecosystem in the country. **Hence, statement (1) is NOT correct.**
- Under this mission, SIDBI will directly **provide loans to eligible small and medium enterprises** (SMEs) for the **purchase of EVs and developing charging infrastructure,** including battery swapping. **Hence, statement (2) is NOT correct.**
- It focuses on increasing the uptake of **electric two-wheelers, three-wheelers and four-wheelers** through **direct and indirect lending support** to vehicle aggregators, fleet operators and leasing companies.

58. (a)

Explanation:

- **PRAYAG** stands for **Platform for Real-time Analysis of Yamuna, Ganga and their Tributaries.**
- It is a real-time monitoring centre for **planning** and **monitoring** projects and **river water quality** through various **online dashboards.**
- It is launched by **Ministry of Jal Shakti** under the ambit of **Namami Gange Programme.**
- Namami Gange Programme is an integrated conservation mission to accomplish objectives of effective abatement of pollution, conservation and rejuvenation of Ganga.
- The mission **incorporates rehabilitating and boosting the existing Sewage Treatment Plants (STPs)** and instant short-term steps to curb pollution at exit points on the riverfront in order to check the inflow of sewage.
- To **maintain the continuity of the water flow** without changing the natural season variations.
- To **restore and maintain the surface flow and groundwater.**
- To regenerate and maintain the natural vegetation of the area.
- To conserve and **regenerate the aquatic biodiversity** as well as the riparian biodiversity of the river Ganga basin.
- To allow participation of the public in the process of protection, rejuvenation and management of the river. **Hence, option (a) is correct.**

59. (c)

Explanation:

- The Carbon Border Adjustment Mechanism (CBAM) is a policy tool designed to **address** the **carbon leakage issue** and promote global efforts to combat climate change.
- CBAM is primarily a trade-related measure implemented by countries or regions to account for the **carbon emissions** associated with imported goods.
- It aims to ensure that **domestic industries** operating under strict carbon reduction regulations are **not placed** at a **competitive disadvantage** by cheaper, carbon-intensive imports from countries with less stringent climate policies.
- The CBAM operates by **assigning** a **carbon price** to certain **imported products** based on their carbon footprint, which considers the emissions generated during their production.
- This carbon price may take the form of **tariffs** or charges, effectively making carbon-intensive imports more expensive and levelling the playing field for domestic producers who adhere to carbon reduction targets.
- The key objectives of CBAM are to incentivize **foreign producers to adopt cleaner,** more **sustainable production practices** and to encourage global adherence to climate goals.
- It also helps **protect domestic industries from carbon leakage,** where companies move their operations to countries with lax climate regulations to reduce costs. **Hence, option (c) is correct.**

60. (b)

Explanation:

- A keystone species is a fundamental concept in ecology, representing certain organisms within an ecosystem that exert a disproportionately large influence on its **structure, biodiversity,** and **functioning.**

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- Much like the keystone in an architectural arch, which supports the entire structure, these species play pivotal roles in maintaining the **ecological balance. Hence, statement (1) is correct.**
- Keystone species can be **predators, herbivores,** or even **plants,** and they often control the abundance and behaviour of other species by directly or indirectly influencing their populations. So, they are not always the largest predator that controls other species in the food chain. **Hence, statement (2) is NOT correct.**
- A classic example of a keystone species is the **sea otter** in **kelp forest ecosystems.** Sea otters feed on sea urchins, which are herbivores that graze on kelp. Without sea otters, sea urchin populations explode, leading to overgrazing of kelp. This, in turn, reduces kelp forests, impacting numerous other species that rely on them for food and shelter.
- Identifying and understanding keystone species is essential for ecosystem management and conservation efforts.
- Protecting these species and their habitats can help preserve the overall health and biodiversity of ecosystems, ensuring their **resilience** in the face of **environmental changes.**
- Keystone species exemplify the **interconnectedness of life in nature,** emphasizing the delicate balance that sustains ecosystems.
- The significance of keystone species lies in their interactions with other organisms and their ability to shape the environment. Their presence or absence can have cascading effects throughout the ecosystem. **Hence, statement (3) is correct.**

61. (c)

Explanation:

- India set new climate objectives as part of its **'Panchamrit strategy'** at Conference of Parties **(CoP-26) Glasgow** Summit.
- It has made a major step towards reaffirming its commitment to sustainable energy and informing the world about its future strategy for combating climate change.
- Further, India presented the following **five nectar elements** *(Panchamrit)* of India's climate action.
- 'Panchamrita' promises include:
  - 'India will take its non-fossil energy capacity to 500 gigawatt by 2030. **Hence, statement (2) is correct.**
  - India will meet 50 per cent of its energy requirements till 2030 with renewable energy. **Hence, statement (1) is correct.**
  - India will reduce its projected carbon emission by one billion tonnes by 2030. **Hence, statement (3) is correct.**
  - India will reduce the carbon intensity of its economy by 45 per cent by 2030.
  - India will achieve net zero **by 2070. Hence, statement (4) is NOT correct.**
- The Panchamrit programme is essentially a technique that India would use to maintain the global temperature far below **1.5 degrees Celsius.**

62. (c)

Explanation:

- **Carbon trading,** also known as emissions trading or cap-and-trade, is a market-based mechanism designed to mitigate greenhouse gas emissions, particularly **carbon dioxide** (CO_2) and other pollutants responsible for climate change. It operates on the principle of putting a price on carbon emissions to incentivize emission reduction and promote sustainability.
- In a **carbon trading system,** a government or regulatory body sets an overall cap on the total allowable emissions for a specific region or industry. This cap is divided into individual allowances or permits, each representing a specific quantity of emissions. **Hence, statement (I) is correct.**
- These allowances can be allocated to companies or entities, often based on historical emissions or other criteria.
- **Companies** that emit **fewer emissions** than their allocated allowances can sell their surplus allowances to those exceeding their limits. This creates a market for carbon credits, where the price of allowances is determined by supply and demand.
- As the cap is gradually lowered over time, companies are encouraged to reduce their emissions to meet their targets efficiently and economically.
- Carbon trading **aims** to create a **financial incentive for businesses to adopt cleaner technologies and practices,** thereby reducing their carbon footprint. It fosters innovation, encourages investment in renewable energy, and helps nations meet their climate goals.

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- However, it also raises concerns about the potential for market manipulation and the need for effective monitoring and enforcement to ensure environmental integrity. **It does not provide financial incentive** for countries to increase their carbon emissions. **Hence, statement (II) is NOT correct.**
- When well-implemented, carbon trading can be a powerful tool in the fight against climate change, promoting sustainable development while reducing carbon emissions.

63. (b)

Explanation:

- In a gas-based economy, **natural gas** plays a pivotal role in meeting energy demands, driving **economic growth,** and **fostering sustainability.**
- Natural gas, primarily composed of methane (CH4), is a versatile and relatively clean-burning fossil fuel. It can be used for various purposes, including electricity generation, heating, industrial processes, and as a transportation fuel.
- A gas-based economy **leverages** the abundance of **natural gas reserves** to reduce reliance on more **carbon-intensive energy** sources like coal and oil, thereby lowering greenhouse gas emissions.
- Key aspects of a gas-based economy include the **development of efficient gas infrastructure, exploration** and **production of natural gas resources,** and the establishment of policies and regulations to ensure safe and sustainable extraction and utilization.
- This economic model not only helps meet energy demands but also contributes to energy security and reduced environmental impact.
- A gas-based economy may also involve the **transition to renewable gases** such as hydrogen produced from natural gas with carbon capture and storage, or green hydrogen generated from renewable sources like wind and solar.
- This shift toward cleaner gas alternatives aligns with global efforts to combat climate change and achieve a sustainable energy future.

Hence, option (b) is correct.

64. (c)

Explanation:

- It refers to the phenomenon where the **Arctic** region **experiences warming** at a rate significantly **faster than** the **global average** temperature increase. **Hence, option (c) is correct.**
- This accelerated warming in the Arctic has far-reaching consequences for the environment, climate systems, and even global weather patterns.
- Several factors contribute to Arctic amplification. One key factor is the **ice-albedo** feedback mechanism.
- As Arctic Sea ice and glaciers melt due to rising temperatures, they expose darker ocean and land surfaces beneath. These darker surfaces absorb more solar radiation, leading to further warming and more ice melt in a feedback loop. This positive feedback mechanism intensifies the warming in the Arctic.
- Arctic amplification has numerous consequences. It accelerates the **loss of sea ice,** contributing to **rising sea levels** and impacting Arctic ecosystems.
- It also **disrupts weather patterns,** potentially leading to extreme weather events in other parts of the world.
- The **release of methane,** a potent greenhouse gas, from thawing permafrost in the Arctic further exacerbates global warming.

65. (b)

Explanation:

- The World Meteorological Organization (WMO) is responsible for international cooperation in meteorology, climatology, hydrology, and related earth sciences.
- Its primary mission is to promote the understanding of the Earth's atmosphere and **climate systems, enhance weather** and **climate services,** and facilitate the exchange of meteorological and hydrological information between member states. **Hence, statement (1) is correct.**
- The World Meteorological Organization (WMO) is an **intergovernmental organization** with a membership of 192 Member States and Territories. **Hence, statement (2) is NOT correct.**
- India is a member of WMO.
- It **originated from the International Meteorological Organization (IMO),** which was established after the **1873** Vienna International Meteorological Congress.
- Established by the ratification of the WMO Convention on **23rd March 1950,** WMO **became the specialized agency of the United Nations** for meteorology (weather and climate), operational hydrology and related geophysical sciences. **Hence, statement (3) is correct.**
- WMO is **headquartered in Geneva, Switzerland.**

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66. (c)

Explanation:

- A sun halo is a mesmerizing atmospheric optical phenomenon that occurs when a circular ring or halo appears around the sun. This captivating display is the result of the **refraction, dispersion,** and **reflection** of sunlight by ice crystals suspended in the Earth's atmosphere. **Hence, statement (2) is correct.**
- The primary cause of sun halos is the presence of **hexagonal ice crystals,** often found in **cirrus clouds** or high-altitude ice crystal formations.
- These tiny ice crystals refract, or bend, sunlight as it passes through them. The bending of light occurs at specific angles due to the shape of the ice crystals, **creating a ring of colors,** similar to a **rainbow** but with a more **uniform distribution. Hence, statement (1) is correct.**
- The most common type of sun halo is the **22-degree halo,** which forms a ring at approximately 22 degrees from the sun. This halo is usually white or colourless on the inside and displays a spectrum of colors on the outside, with red on the inner edge and violet on the outer edge. Other types of sun halos, such as the rare 46-degree halo and the more common 9-degree and 18-degree halos, can also occur, each with its unique characteristics.
- Sun halos are awe-inspiring natural phenomena, often seen as celestial marvels. They are commonly observed during cold weather when high-altitude ice crystals are prevalent but can occur at any time of the year under the right atmospheric conditions.
- While sun halos are beautiful to behold, they also serve as a reminder of the intricate ways in which light interacts with our atmosphere and the wonders of our natural world.

67. (c)

Explanation:

According to the International Standards for drinking water:

- **Fluoride:** For drinking purposes, water should be tested for fluoride ion concentration. Its **deficiency in drinking water** is harmful to man and causes diseases such as **tooth decay** etc. At the same time, excess fluoride (over 10 ppm) causes harmful effect to bones and teeth, **as reported from some parts of Rajasthan. Hence, pair (1) is correctly matched.**
- **Lead:** Drinking water gets contaminated with lead when lead pipes are used for transportation of water. The prescribed upper limit concentration of lead in drinking water is about 50 ppb. **Lead can damage kidney, liver, reproductive system etc. Hence, pair (3) is correctly matched.**
- **Sulphate:** Excessive sulphate (>500 ppm) in drinking water causes laxative effect, otherwise at moderate levels it is harmless.
- **Nitrate:** The maximum limit of nitrate in drinking water is 50 ppm. **Excess nitrate in drinking water can cause disease such as methemoglobinemia ('blue baby' syndrome). Hence, pair (2) is correctly matched.**

68. (c)

Explanation:

- Green chemistry is a cost-effective approach which involves reduction in material, energy consumption and waste generation.
- **Powder of kernel of tamarind seeds** has been found to be an effective material **to make municipal and industrial wastewater clean.** It is non-toxic, biodegradable and cost-effective material. This powder is usually discarded as agricultural waste.
- **Membrane technology** is a physical technique that involves **filtration of wastewater** and able to remove diverse size ranges (micro to nano) of contaminants via specialized membranes with diverse filtration characteristics (hydrophobicity, surface charge, pore size) to facilitate the contaminant removal.
- A new simple and cost-effective method for purification of river water for **use by rural communities has been developed and tested**. It involves **use of moringa seed powder as a natural coagulant and flocculent to clarify turbid water** and copper as an antibacterial agent to destroy pathogens like E. coli to produce clean drinking water.
- **Electroplating is the process of plating one metal onto another by hydrolysis, most commonly for decorative purposes or to prevent corrosion of a metal.** There are also specific types of electroplating such as copper plating, silver plating, and chromium plating. **Hence, option (c) is correct.**

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69. (d)

Explanation:

- **Most of the organic toxins like micro plastics are water insoluble and nonbiodegradable.**
- These high persistent toxins are, therefore, **transferred from lower trophic level to higher trophic level through food chain.**
- Over the time, **the concentration of toxins in higher animals reach a level which causes serious metabolic and physiological disorders.**
- **Bioaccumulation takes place in a single organism over the span of its life, resulting in a higher concentration in older individuals. Hence, statement (1) is NOT correct.**
- **Biomagnification takes place as chemicals transfer from lower trophic levels to higher trophic levels within a food web, resulting in a higher concentration in apex predators. Hence, statement (2) is NOT correct.**
- In response to high persistence of chlorinated organic toxins, a **new series of less persistent or more bio-degradable products called organo-phosphates and carbamates** have been introduced in the market.
- But these **chemicals are severe nerve toxins and hence more harmful to humans.** As a result, there are reports of some pesticides related deaths of agricultural field workers.

70. (a)

Explanation:

- **The organic chemicals** are another group of substances that are found in polluted water.
- Various **industrial chemicals like polychlorinated biphenyls, (PCBs) which are used as cleansing solvent, detergents and fertilizers add to the list of water pollutants.**
- PCBs are suspected to be **carcinogenic.** Nowadays most of the detergents available are biodegradable. However, their use can create other problems.
- The bacteria responsible for degrading biodegradable detergent feed on it and grow rapidly.
- While growing, they may use up all the oxygen dissolved in water.
- **The lack of oxygen kills all other forms of aquatic life such as fish and plants.**
- Fertilizers contain phosphates as additives. The addition of phosphates in water enhances algae growth.
- Such **profuse growth of algae covers the water surface and reduces the oxygen concentration in water.**
- This leads to **anaerobic conditions,** commonly with accumulation of obnoxious decay and animal death. Thus, bloom-infested water inhibits the growth of other living organisms in the water body.
- **This process in which nutrient enriched water bodies support a dense plant population, which kills animal life by depriving it of oxygen and results in subsequent loss of biodiversity is known as Eutrophication. Hence, option (a) is correct.**

71. (c)

Explanation:

- **Decomposers break down complex organic matter into inorganic substances like carbon dioxide, water and nutrients and the process is called decomposition.**
- The important steps in the process of decomposition are **fragmentation, leaching, catabolism, humification** and **mineralisation.**
- Decomposition is largely an oxygen-requiring process. The rate of decomposition is controlled by chemical composition of detritus and climatic factors.
- **In a particular climatic condition, decomposition rate is slower if detritus is rich in lignin and chitin, and quicker, if detritus is rich in nitrogen and water-soluble substances like sugars. Hence, statement (2) is NOT correct.**
- The chain or web is formed because of interdependency. No energy that is trapped into an organism remains in it for ever.
- The energy trapped by the producer, hence, is either passed on to a consumer or the organism dies. Death of organism is the beginning of the detritus food chain/web.
- **The detritus food chain (DFC) begins with dead organic matter.** It is made up of decomposers which are heterotrophic organisms, mainly fungi and bacteria. **Hence, statement (1) is correct.**
- In an aquatic ecosystem, Grazing food chain is the major conduit for energy flow. **As against this, in a terrestrial ecosystem, a much larger fraction of energy flows through the detritus food chain than through the grazing food chain (GFC). Hence, statement (3) is correct.**

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72. (d)

Explanation:

- Populations evolve to maximise their reproductive fitness, also called Darwinian fitness in the habitat in which they live.
- Under a particular set of selection pressures, organisms evolve towards the most efficient reproductive strategy.
- Ecologists suggest that life history traits of organisms have evolved in relation to the constraints imposed by the abiotic and biotic components of the habitat in which they live.
- **Some organisms breed only once in their lifetime (Pacific salmon fish, bamboo) while others breed many times during their lifetime (most birds and mammals). Hence, statements (1) and (2) are correct.**
- **Some produce a large number of small-sized offspring (Oysters, pelagic fishes) while others produce a small number of large-sized offspring (birds, mammals). Hence, statements (3) and (4) are correct.**
- Evolution of life history traits in different species is currently an important area of research being conducted by ecologists.

73. (b)

Explanation:

- From the original seed-eating features, many other forms with altered beaks arose, enabling them to become insectivorous and vegetarian finches.
- **This process of evolution of different species in a given geographical area starting from a point and literally radiating to other areas of geography (habitats) is called adaptive radiation. Hence, option (b) is correct.**
- Darwin's finches represent one of the best examples of this phenomenon.
- Another example is Australian **marsupials.** A number of marsupials, each different from the other evolved from an ancestral stock, but all within the Australian island continent.
- **When more than one adaptive radiation appeared to have occurred in an isolated geographical area (representing different habitats), this is called convergent evolution.**
- Placental mammals in Australia also exhibit adaptive radiation in evolving into varieties of such placental mammals each of which appears to be 'similar' to a corresponding marsupial (e.g., Placental wolf and Tasmanian wolf-marsupial).
- **Genetic drift,** also called genetic sampling error is a change in the gene pool of a small population that takes place strictly by chance.
- **Geographic Speciation** occurs when a group within a species separates from other members of its species and develops its own unique characteristics.

74. (d)

Explanation:

- Recently, The **Supreme Court of India** has asked the Centre to provide data that may lead to a more dignified, less painful, and socially acceptable method of executing prisoners other than death by hanging.
- **Section 354 (5) of the Code of Criminal Procedure** mandates that a person sentenced to death shall 'be hanged by the neck till he is dead'. **Hence, statement (1) is NOT correct.**
- It is argued that there is a need to evolve a "humane, quick, and decent alternative" and termed hanging as 'cruel and barbarous' compared to lethal injection.
- The term **death penalty is sometimes used interchangeably with capital punishment,** though imposition of the penalty is not always followed by execution, it can be commutated into life imprisonment or **pardoned by the President under Article 72 of Indian Constitution.** A governor cannot pardon a death sentence. **Hence, statement (2) is NOT correct.**

75. (b)

Explanation:

- Recently, the **Supreme Court (SC)** has said that the **Governor cannot call for a Floor Test on the basis of internal differences** in the Party Members. **Hence, statement (2) is correct.**
- The SC while hearing a case about a dispute between two factions in a political party, discussed the powers and role of the Governor in calling for a trust vote.
- **Article 174(2)(b) of the Constitution** gives powers to the Governor to **dissolve the Assembly on the aid and**

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advice of the cabinet. However, the Governor can apply his mind when the advice comes from a Chief Minister whose majority could be in doubt.

- When the **House is in session, it is the Speaker who can call for a floor test.** But when the Assembly is not in session, the Governor's residuary powers under **Article 163** allow him to call for a floor test. **Hence, statement (1) is NOT correct.**

76. (c)

Explanation:

- **Article 142 of the Indian Constitution** indeed grants discretionary powers to the Supreme Court of India. It allows the **Supreme Court to pass any decree** or make any order **necessary for doing complete justice** in any matter or because that is before it. **Hence, statement (1) is correct.**
- This provision is a broad and essential tool for the Supreme Court to ensure justice in cases where existing laws may not provide adequate remedies.
- Article 142, by granting **discretionary powers** to the Supreme Court, has often been invoked in cases where the Court takes an active role in interpreting and enforcing constitutional and legal principles.
- This proactive approach, where the judiciary goes beyond merely interpreting laws to address societal issues and injustices, is often referred to as "judicial activism." **Hence, statement (2) is correct.**
- Judicial activism, while aimed at addressing societal concerns and ensuring justice, can **sometimes lead to concerns about the separation of powers between** the legislative, executive, and judicial branches of government.
- When the judiciary takes an active role in policy-making or executive functions, it can be seen as encroaching on the powers of the other branches. **Hence, statement (3) is correct.**

77. (d)

Explanation:

- Recently, **India ranked 42nd among 55 leading global economies** on the International Intellectual Property (IP) Index 2023 released by the **U.S. Chambers of Commerce,** according to which India is ripe to become a leader for emerging markets seeking to transform their economy through IP-driven innovation. **Hence, (d) is correct.**
- The US topped the International IP Index followed by the United Kingdom and France.
- Intellectual Property (IP) refers to **creations of the mind, such as inventions, literary and artistic works, symbols, names, and images used in commerce.**
- It is a form of legal protection in the form of Intellectual Property Rights (IPR) given to individuals or companies for their creative and innovative works.

78. (b)

Explanation:

- **Article 20** grants protection against arbitrary and excessive punishment to an accused person, whether citizen or foreigner or legal person like a company or a corporation. It contains three provisions in that direction: **No ex-post-facto law, No double jeopardy, No self-incrimination.**
- **Right against self-incrimination [Article 20(3)]:** No person accused of any offence shall be compelled to be a witness against himself. **Hence, statement (1) is correct.**
- **The protection against self-incrimination** extends to both oral evidence and documentary evidence. **Hence, statement (2) is correct.**
- However, it does not extend to:
  - compulsory production of material objects,
  - compulsion to give thumb impression, specimen signature, blood specimens, and
  - compulsory exhibition of the body.
  - Further, it **extends only to criminal proceedings and not to civil proceedings** or proceedings which are not of a criminal nature**. Hence, statement (3) is NOT correct.**

79. (a)

Explanation:

- The **Bar Council of India (BCI) is a statutory body** created by Parliament under the **Advocates Act, 1961** to regulate and represent the Indian bar. **Hence, statement (1) is correct.**
- It **operates within the legal framework provided under Advocates act.** While it does have a degree of autonomy in regulating legal professionals, **it is subject to government oversight and certain regulations** outlined in the Advocates Act. **Hence, statement (2) is NOT correct.**

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- **BCI performs the regulatory function** by prescribing standards of professional conduct and etiquette and by exercising disciplinary jurisdiction over the bar.
- It sets standards for legal education and grants recognition to universities whose degree in law will serve as **qualification for enrolment as an advocate.** The Bar Council of India is **not responsible for enacting or enforcing criminal laws. Hence, statement (3) is NOT correct.**
- In addition, it performs certain representative functions by **protecting the rights, privileges and interests of advocates** and through the creation of funds for providing financial assistance to organise welfare schemes for them.

80. (b)

Explanation:

- According to **Stockholm International Peace Research Institute's (SIPRI)** Trends in International Arms Transfers 2022 report, **India remained the world's largest arms importer** from 2018 to 2022 followed by Saudi Arabia and Ukraine. **Hence, statement (1) is NOT correct, and statement (3) is correct.**
- **Russia was India's largest arms supplier in the periods between 2013-17 and 2018-22,** but its share of arms imports to India fell from 64% to 45% while France emerged as the second largest arms supplier to India between 2018-22 at 29%, followed by the US at 11%. **Hence, statement (2) is correct.**
- Russia's position as India's main arms supplier is under pressure owing to strong competition from other supplier states, increased Indian arms production, and, since 2022, constraints on Russia's arms exports related to its invasion of Ukraine.

SIPRI

It is an independent international institute dedicated to research into conflict, armaments, arms control and disarmament.

- It was established in 1966 in Stockholm (Sweden).
- It provides data, analysis and recommendations, based on open sources, to policymakers, researchers, media and the interested public.

81. (b)

Explanation:

- **Foreign funding of voluntary organizations** in India is regulated under Foreign Contribution Regulation Act (FCRA), 2010 and is implemented by the **Ministry of Home Affairs. Hence, statement (1) is NOT correct.**
- **FCRA was enacted during the Emergency in 1976** amid apprehensions that foreign powers were interfering in India's affairs by pumping money into the country through independent organisations.
- The law sought to regulate foreign donations to individuals and associations so that they functioned in a manner consistent with the values of a sovereign democratic republic.
- **Amendments:** An amended FCRA was enacted in 2010 to **"consolidate the law"** on utilisation of foreign funds, and **"to prohibit"** their use for **"any activities detrimental to national interest".**
- The law was a**mended again in 2020,** giving the government tighter control and scrutiny over the receipt and utilisation of foreign funds by NGOs.
- **Criteria:**
  - The FCRA requires every person or NGO seeking to receive foreign donations to be registered under the Act;
  - to open a bank account for the receipt of the foreign funds in **State Bank of India, Delhi;**
  - to utilise those funds only for the purpose for which they have been received and as stipulated in the Act. **Hence, statement (2) is correct.**
- The **Act prohibits the receipt of foreign funds** by candidates for elections, journalists or newspaper and media broadcast companies, judges and government servants, members of legislature and political parties or their office-bearers, and organisations of a political nature. **Hence, statement (3) is correct.**

82. (c)

Explanation:

- CITIIS, or the **City Investments to Innovate, Integrate and Sustain,** is a sub-component of the Government of India's **Smart Cities Mission**. **Hence, statement (1) is correct.**
- It is a joint program of **the Ministry of Housing and Urban Affairs, Agence Francaise de Development**

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(AFD), the European Union (EU), and the National Institute of Urban Affairs (NIUA). Hence, statement (2) is correct.

- The CITIIS program is assisting **12 Smart Cities in India,** which were chosen by a rigorous challenge process, develop and implement innovation-driven and sustainable urban infrastructure projects.
- The program will run **for a period of four years, i.e., from 2023 till 2027.**
- Each city receives financial assistance in the form of a grant and technical assistance through a three-tier model comprising a Global Mentor, a Domestic Expert, and Transversal Experts.

83. (c)

Explanation:

- **The Future of Jobs Report 2023** published by **World Economic Forum** explores how jobs and skills will evolve over the next five years. **Hence, option (c) is correct.**
- This fourth edition of the series continues the analysis of employer expectations to provide new insights on how socio-economic and technology trends will shape the workplace of the future.
- **Key findings of the report:**
  - Technology adoption will remain a key driver of business transformation in the next five years.
  - The largest job creation and destruction effects come from environmental, technology and economic trends.
  - Within technology adoption, big data, cloud computing and AI feature highly on likelihood of adoption.
  - Employers anticipate a structural labour market churn of 23% of jobs in the next five years.
  - Employers estimate that **44% of workers' skills will be disrupted in the next five years.**

84. (b)

Explanation:

- There may be some companies that are doing extremely well operationally, and investors wait with bated breath to buy the shares of such companies when first shares are issued.
- In such a situation, the company**, knowing its brand value and market expectations,** may issue **shares at a price way higher** or over what a comparable stock may be granted at in the market.
- In a scenario like that, unlisted companies have to pay income tax on the money raised through such an issue. **The excess of funds raised at prices above fair value is treated as income, on which tax is levied.** This levied tax is called Angel tax. **Hence, option (b) is correct.**
- It was **introduced in 2012** as a measure to prevent generation and circulation of unaccounted money.
- It was called the **angel tax as it initially applied primarily to Indian angel investors - usually high net worth individuals** who invest in startups.
- Prior to the 2023 Budget proposal, angel tax provisions were applicable only for investments received from resident investors. However, Finance Bill 2023 has now extended its applicability to non-resident investors as well.

85. (c)

Explanation:

- The **textile sector** is one of the critical sectors of the Indian economy, accounting for **more than 2% of the total GDP** (Gross Domestic Product) and more than **12% of the manufacturing sector** GDP.
- The sector is **the 2nd largest provider of employment in India, after agriculture. Hence, statement (1) is correct.**
- **India is the 6th largest exporter of textile** and apparel in the world, with 4% share of the global trade in textiles and apparel.
- India allowed duty-free import of readymade garments from Bangladesh under the South Asian Free Trade Agreement (SAFTA) in 2006, resulting in an increase in imports of apparels made with Chinese fabrics and yarns.
- India suffers from the disadvantage of duties being imposed by the importing countries.
- **Countries like Bangladesh, Sri Lanka and African countries get duty-free access and make India's textiles comparatively less competitive in the international landscape. Hence, statement (3) is correct.**
- **PM MITRA Scheme and Textile Sector**
  - The Centre has selected sites in Tamil Nadu, Telangana, Karnataka, Maharashtra, Gujarat, Madhya Pradesh and Uttar Pradesh to set up **new textile parks** under the **PM Mega Integrated Textile Regions and Apparel (PM MITRA) scheme. Hence, statement (2) is correct.**

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- PM MITRA Park will be developed by a Special Purpose Vehicle which will be owned by the Central and State Government and in a Public Private Partnership (PPP) Mode.

86. (b)

Explanation:

- Hon'ble Finance Minister Smt. Nirmala Sitharaman as part of the Budget Speech for FY 2019-20 proposed the idea of an electronic fund-raising platform **"Social Stock Exchange", under the regulatory ambit of SEBI for listing social enterprises and voluntary organizations working for the realization of a social welfare objective** so that they can raise capital as equity, debt or as units like a mutual fund. **Hence, statement (1) is NOT correct, and statement (2) is correct.**
- **Objectives** of the Social Stock Exchange:
  - Regulated platform that brings together social enterprises and donors.
  - Facilitate funding and growth of social enterprises.
  - Enabling mechanism to ensure robust standards of social impact and financial reporting.
- The **Social Stock Exchange segment on NSE** provides Social Enterprises (Non-profit organizations (NPOs) and For-profit enterprises (FPEs)) engaged in eligible activities a unique opportunity to register itself and raise funds on a recognized exchange platform.
- **A Social Enterprise i.e., a Not-for-Profit Organization (NPO) or a For Profit Social Enterprise (FPE)** fulfilling the **eligibility conditions as specified in SEBI ICDR** Regulations or as specified by SEBI from time to time will be permitted to register or list its instruments.

87. (c)

Explanation:

- **Hawaiian volcano kilauea** erupted again recently.
- Kilauea volcano is **active shield** volcano (erupts magma of low viscosity and hence less steep) located on the **Hawaiian island. Hence, statement (1) is correct.**
- Hawaii, USA is a group of **8 volcanic islands in the central Pacific Ocean** stretching in a crescent from Kure Island in the west to Hawaii in the east. **Hence, statement (2) is correct.**
- Volcanoes make up **51%** of Hawaii Island landmass.
- The caldera was the site of **nearly continuous activity** during the 19th century and the early part of the 20th century.
- It is **one of the world's most active volcanoes,** having erupted **34 times since 1952.**
- Hawaiian volcanic island lies southeast of Maui Island and constitutes Hawaii county. Known as the Big Island, it is the southeasternmost and largest of the Hawaiian Islands. Its area of some 4,030 square miles (10,438 square km) continues to grow as Kilauea, the world's most active volcano, continues to pour lava into the ocean.
- The island is formed by five volcanoes (Hualalai, Kilauea, Kohala, Mauna Kea, and Mauna Loa) that are connected by lava saddles (ridges) and is the youngest island geologically of the Hawaiian Islands.

88. (c)

Explanation:

- **Ceiling fans** have come under the ambit of mandatory star labelling of **Bureau of Energy Efficiency (BEE). Hence, statement (2) is correct.**
- Standards and Labelling Program was launched in **2006, under Energy Conservation Act, 2001. Hence, statement (1) is correct.**
- Under it, a Star Rating was introduced on appliances for visual representation of appliance's efficiency.
- Lowest energy consumption appliances having highest star and highest energy consumption having the least star.
- It is **mandatory for several appliances** including Frost Free and Direct Cool Refrigerator, LED Lamps, Room AC (Variable and Fixed speed), Colour TV, Refrigerators, TFL, Stationary Storage Type Electric Water Heater etc.

89. (a)

Explanation:

- **Ministry of Environment, Forest and Climate Change (MoEFCC)** has listed Neelakurinji under Schedule **III** of Wildlife (Protection) Act, 1972, including it on list of protected plants.
- **About Neelakurinji:**
  - It is a **shrub/Plant that grows in the shola forests** of **Western Ghats** in South India.
  - **Neelakurinji** flowers **bloom once every 12 years.**
- Plant is named after the famous **Kunthi River** which flows through **Kerala's Silent Valley National Park,** where plant occurs abundantly.

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- Eravikulam National Park, near Munnar, is known for the widespread blooming of kurinji. Blue colour of Kurinji has given Nilgiri hills its name, literally meaning Blue Mountains.

Hence, option (a) is correct.

90. (a)

Explanation:

- **International Seabed Authority (ISA):** It is an autonomous international organization established under 1982 United Nations Convention on the Law of the Sea (UNCLOS) and 1994 Agreement relating to Implementation of UNCLOS. **Hence, statement (1) is correct.**
- It has the mandate to ensure the effective protection of the marine environment from harmful effects that may arise from deep-seabed related activities. ISA has its headquarters in **Kingston, Jamaica. Hence, statement (2) is NOT correct.**
- ISA is committed to supporting the timely and effective achievement of the goals and targets of the **2030 Agenda for Sustainable Development of the United Nations** through the implementation of the economic, social and environmental mandates assigned to it by UNCLOS and the 1994 Agreement.

91. (a)

Explanation:

ASH TRACK Mobile APP:

- It has been launched by the **Ministry of Power. Hence, pair (1) is correctly matched.**
- It has been launched for the better management of fly ash produced by thermal power plants by providing an interface between fly ash producers (Thermal Power Plants) and potential ash users such as – road contractors, cement plants etc.

MADAD APP:

- It has been launched by the **Ministry of External Affairs. Hence, pair (2) is NOT correctly matched.**
- It has been **setup for users to register online grievances** pertaining to the Consular Services offered by the Indian Missions/Posts abroad.
- Indian students studying/planning to study abroad, may also register themselves on the portal to facilitate contact by the nearest Indian Missions/Posts, if need arises.

ATITHI APP:

- It is developed by **Directorate General of Systems, Central Board of Indirect Taxes (CBIC),** Department of Revenue, **Ministry of Finance,** Government of India to drive digital Governance in India. **Hence, pair (3) is NOT correctly matched.**
- This **application provides a platform for all visitors travelling to India globally to file their baggage, Item & Currency declarations and other citizen centric services.**
- It will reduce the time taken for Customs Declaration and will ease the arrival process at Indian Airports.

92. (c)

Explanation:

- **Talacauvery** in Kodagu District, **Karnataka** has emerged as South India's Hanle.
- **Hanle (in Ladakh)** is India's first Dark Sky Reserve. **Hence, statement (1) is correct.**
- Dark Sky Reserve is a designation given to a **public or private land** with exceptional or distinguished quality of starry nights, and nocturnal environment that is specifically protected for its scientific, natural, educational, cultural, heritage and/or public enjoyment. **Hence, statement (3) is correct.**
- Dark Sky location depends on light pollution which is measured on Bortle Scale.
- **Bortle Scale** measures night sky's brightness on a nine-level numerical scale with lesser numerical scale representing darkness. **Hence, statement (2) is NOT correct.**

93. (a)

Explanation:

- It is a **rare species of duck** that was recently sighted in **Loktak lake (Manipur)** after a gap of over 90 years.
- Loktak lake is famous for **Keibul Lamjao National Park** and Sangai, the dancing deer.
- **Greater Scaup is a migratory bird** widely distributed across Arctic and Subarctic regions where it mainly nests in coastal tundra habitats.
- It belongs to the family of Anatidae.
- **IUCN status: Least Concern**

Hence, option (a) is correct.

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94. (c)

Explanation:

- UNU-INWEH is one of the United Nations University (UNU) institutes, an academic arm of the UN. **Hence, statement (1) is correct.**
- UNU-INWEH is the only institute in UNU that focuses entirely and solely on water issues. **Hence, statement (2) is correct.**
- UNU-INWEH's mission is to help resolve pressing water challenges that are of concern to the United Nations, its Member States, and their people.
- The General Assembly ordered a feasibility study and appointed a panel of experts to work closely with UNESCO in examining the potential for building such an institution.
- The panel submitted a report to the UN Economic and Social Council in September 1972, and in December 1972 the General Assembly adopted the decision to establish the United Nations University (UNU), thereby formally establishing the world's first international university.

95. (a)

Explanation:

- Asian Waterbird Census (AWC), an **annual** event, is a citizen science programme supporting conservation and management of wetlands and waterbirds.
- AWC is part of the global **International Waterbird Census** (IWC) coordinated by **Wetland International (WI). Hence, statement (1) is correct.**
- It was initiated in 1987 in Indian subcontinent.
- In India, AWC is jointly coordinated by **Bombay Natural History Society (BNHS) and WI (global not-for profit organisation). Hence, statement (2) is NOT correct.**
- BNHS, formed in 1883, is a **non-governmental organization** engaged in conservation of biodiversity research.
- BNHS has been designated as a Scientific and Industrial Research Organization (SIRO) by the **Department of Science & Technology.**

96. (b)

Explanation:

- Sustainable Aquaculture In Mangrove Ecosystem (SAIME) is **a community-based pilot project in West Bengal** under which farmers are planting mangrove trees around shrimp ponds. **Hence, statement (1) is NOT correct.**
- Generally, mangrove forests are cleared to cultivate shrimps in the areas.
- It is being conceived by **Nature Environment and Wildlife Society (NEWS), Global Nature Fund and Bangladesh Environment and Development Society (BEDS). Hence, statement (2) is correct.**
- It is expected to restore the mangroves.
- Mangroves are a group of trees and shrubs that live in coastal intertidal zones.
- They prevent erosion and absorb storm surge impacts during extreme weather events.

97. (b)

Explanation:

Mahesh Chandra Mishra committee (1976):

- The government appointed **MC Mishra committee for reconnaissance of the land subsidence near the Himalayan border.**
- Report stated that **Joshimath was situated on an old landslide zone, and it does not have high load bearing capacity.**
- Joshimath could sink if development continued unabated.

Recommendation:

- Restrictions on heavy construction work, agriculture on slopes, felling of trees.
- Construction of pucca drainage to stop seepage of rainwater, proper sewage system, and cement blocks on riverbanks to prevent erosion.

Hence, option (b) is correct.

98. (c)

Explanation:

- International Civil Aviation Organization (ICAO) was established in **1947** under the Convention on International Civil Aviation **(Chicago Convention),** which was drafted in **1944 by 54 nations. Hence, statement (1) is correct.**
- **Membership: 193** members including India.
- **It is a specialized agency of the United Nations.**
- Headquartered: Montreal, Canada
- Its vision is to achieve sustainable growth of the global civil aviation system. **Hence, statement (2) is correct.**

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- The ICAO Secretariat is funded and directed by States to provide technical, legal, and administrative support for their air transport cooperation.
- It also develops programmes, guidance materials, and closely integrated auditing, training, and implementation support initiatives to help countries benefit and prosper from their improved compliance with global norms.

99. (b)

Explanation:

- **Bhil tribe of Central India is opposing the forest department's decision to give permission for uprooting baobab trees for commercial use.**
- Baobabs belongs to the genus Adansonia are **native to mainland Africa, Madagascar, and Australia. Hence, statement (1) is NOT correct**.
- They have **unusual barrel-like trunks and are known for their extraordinary longevity** (live up to 2,000 years) and ethnobotanical importance. **Hence, statement (2) is correct.**
- The tree's unique pendulous flowers are pollinated by bats and bush babies.
- IUCN Status: **Endangered**
- Madhya Pradesh government has applied for a Geographical Indication (GI) tag.
- Their distinctive silhouettes loom over the acacia scrubland, with Medusa-like branches spreading chaotically above a bulbous body.
- Baobabs may not be as tall as the coast redwoods of North America, but their vast bulk makes them a strong contender for the world's largest tree.
- **Type of Trees:** Baobabs are **deciduous trees.**
- Deciduous forest is a vegetation composed primarily of broad-leaved trees that **shed all their leaves during one season.**

100. (b)

Explanation:

- **National Mission for Clean Ganga (NMCG) organized River-Cities Alliance (RCA) Global Seminar.**
- **RCA is a dedicated platform for river cities to ideate, discuss and exchange information for sustainable management of urban rivers. Hence, statement (1) is correct.**
- Alliance is open to all river cities of India. It has expanded to 109 river cities across India and **one international member city from Denmark. Hence, statement (2) is correct.**
- It is a joint initiative of **the Ministry of Jal Shakti & Ministry of Housing and Urban Affairs. Hence, statement (3) is NOT correct.**
- It gives opportunities to the cities to strengthen governance aspects for river cities and **improves their liveability to attract external economic investments,** access state of the art knowledge and frameworks as well as an opportunity to serve as the site for unique demonstration projects.

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